

RECORDS ^{OF} THE PAST

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THE VIA PRAENESTINA

IT IS a matter of convenience and custom that visitors to Rome see only one of the many famous old military roads that centered at the Golden Milestone. The fading charms of that queen of roads, the Appian Way, still offer most of beauty and interest to the sightseer. From Casale Rotondo to the tomb of Cæcilia Metella one has ruined tombs on either side, and farther in toward Rome come the catacombs of St. Callixtus, the relics in the church of St. Sebastian, then the little church of Quo Vadis, and last, the gate through which St. Paul passed on his way to Rome. True, the gate was not built until some 200 years after Paul was dead, but the guide does not know that, and if he did, he would lightly scorn such a statistical attempt to rob him of his last and most thrilling piece of information. But in these 5 miles of Appian Way, one does not see a single stone of the Roman road, nor does one get an intimation of what a Roman road really looked like.

The Via Appia, however, is equalled, perhaps excelled, by at least one other of that system of highways which records the greatest achievement of Roman practical genius. This is the Via Prænestina. In its 23 miles from Præneste, the modern Palestrina, to Rome, this road has more of interest, shows better preservation, crosses finer bridges, and finally enters Rome at a more interesting gate than any other one of the Roman roads. The Via Prænestina gets its name from its destination, Præneste, that proud city always called the key



PALESTRINA, A WHITE SPOT AGAINST THE PURPLE OF THE SABINES

of Rome, because of its commanding position at the head of the valley which leads to Naples and southern Italy. The town has also often been called the Delphi of Italy, because of its famous temple to the goddess Fortune, *Fortuna Primigenia*. The modern town of Palestrina is built, in the main, on the site of its old temple, and is another of those many Italian towns which cling to the sides, or perch on the top, of the conical hills that fringe the Campagna, and look so white and cool and inviting—from a distance. Around most of the town, and up to and around the citadel on the summit of the hill, runs the same old Cyclopean wall which was there, when in 390 B. C. the Gauls captured Rome, the wall which Cicero's few men manned against Catiline, the wall which even in part withstood the stern mandate of the Pope in the XIV century, who, after capturing the town from the Colonna family, ordered that every stone be thrown down, and the city sowed to salt. That some of this ancient wall still remains, the accompanying illustration shows. It serves now as a foundation for a row of the city's houses.

The town of Palestrina¹ is built part way up the south side of Monte Glicestro, a conical-shaped mountain from which radiate some half dozen long ridges with intervening valleys. Just as the Via Appia runs along the top of a ridge formed by a stream of lava which flowed down towards Rome from the Alban hills, so the Via Prænestina runs along the crest of a similar ridge from Monte Glicestro. For about 4 miles, however, the ancient and the modern roads coincide, and only here and there by the side of the road, or cropping up through it, does one see the huge stones of the ancient way. There is one stretch for nearly a mile where not a vestige of the old road is to be

¹The day before Easter, 1907, I walked the whole length of the Via Prænestina from Palestrina to Rome, and the illustrations here shown are from photographs which I took that day.

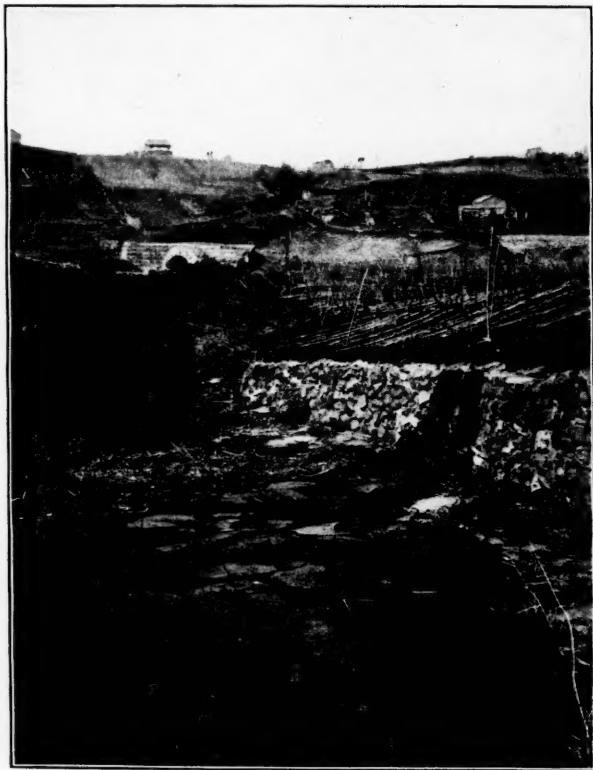


A FENCE OF LAVA BLOCKS TAKEN FROM VIA PRAENESTINA

found. It was on this very stretch that I chanced to meet several groups of the peasant women who were bringing in great baskets of vegetables, or shelled corn and eggs, to exchange for cloth and spaghetti. They were trudging stoutly along in their heavy shoes, short skirts, and outside corsets, their baskets balanced safely on their head pads. One party of 25 or more was singing, an old woman in front with a deep voice leading a chant, the rest keeping up the reiterated response, "Ora pro nobis," as long as I could hear them. It is small wonder that where ancient and modern roads coincide the former are covered up or let alone, for the paving stones of a Roman road are so big and heavy that they cannot be moved easily, but in some places where they have been taken from the ground, they can still be seen serving other purposes than that for which they were fashioned. Not far from Gallicano, one could almost be persuaded that the old Via Prænestina had decided to stand on edge. For quite a distance a roadside fence is made almost wholly from the stones of the old road.

About 4 miles from Palestrina the ancient road comes suddenly to view, breaking out from under the modern road nearly at right angles, and plunges rather steeply down into the valley toward the

southwest, in order to cross a little stream by the Ponte Amato, which is one of the finest of Roman bridges in existence, a true Roman arch bridge in splendid preservation, and all ancient except three new stones at the top of the arch. The accompanying illustration shows the ancient paving stones in the old road just below the spot where it turns sharply from its straight course along the ridge. It will be noticed how the modern fence and wall on either side preserve the line of the ancient property rights. The bridge in the middle foreground of the illustration is the Ponte Amato just mentioned, while



PONTE AMATO, BY WHICH THE VIA PRAENESTINA CROSSES A RAVINE

the one to the right is a concrete affair of more recent date over which run the modern aqueduct and post road from Zagarolo to Gallicano. The ancient road, after crossing the bridge, climbs slantingly half way up the farther ridge, and dives through a deep cut, made as early as 250 B. C., and comes out upon a splendid view over miles of rolling Campagna. Soon after the road emerges from the cut, part way down the slope it crosses the line of a modern road, which could claim a greater antiquity than the Via Praenestina itself, for it is the very



A SECTION OF VIA PRAENESTINA

road which was one of the main trading routes up the Trerus valley, past Tibur, and on to the north.

The next 10 miles of the Via Praenestina show the finest piece of Roman road paving anywhere in the vicinity of Rome. That this long stretch of pavement has been left untouched by the greedy road or street constructor, is due undoubtedly to the fact that it is rather too far from any modern road to make it pay to excavate and transport the blocks. The long black line threads its way off towards Rome, its polished surface glinting strangely in contrast to the grayish white of the barren waste of the Campagna; ten miles of a mighty reminder of Rome's former greatness and pride, stretching its band of hewn lava across the undulating Campagna, now lost and forgotten to everybody but the archæologist and the shepherd. Once clear of the cut, and across the modern thoroughfare, our road bends slightly away from the tips of several parallel ridges in exactly the direction to give one a fine view of the upper course of the two aqueducts which with their arches form the most famous of the ruins in the Campagna near Rome. There these two aqueducts, the Claudia and the Anio Novus, run one above the other on the same arches, but out here, they run side by side, tunneling the parallel ridges and bridging the valleys. But soon the road loses sight of the aqueducts, running on mile after mile up and down over the undulating country, affording

only two unchanging views, that of the line of the Sabine mountains to the right, and the town-spotted slopes of the Alban hills back to the left, granting sometimes for a moment off down a sweeping valley a glimpse of broken villa walls, or the dim outline of an aqueduct against the horizon. With every step something new, something strange; nothing the same except the monotony of desolation and loneliness. Ten such miles, however, give one an unforgettable idea of the way Rome built her roads, great lava blocks, faced on one side, often 3 or 4 ft. either way across the top, and 2 ft. thick, nicely graded and set in a prepared bed of concrete another foot or more in thickness. One sees the very ruts in the stones, and can be sure that they were made in part by the wheels of the heavy baggage wagons which Sulla took out to his camp before Præneste, when he besieged the younger Marius there, nearly 2,000 years ago. The road looks rough. It is. It was not made for the light wheels of pleasure chariots, but for the rapid march of Rome's legionaries, and for the safe conveyance of great wagons of baggage and rations. Rome's military roads were the finest thing she ever built.

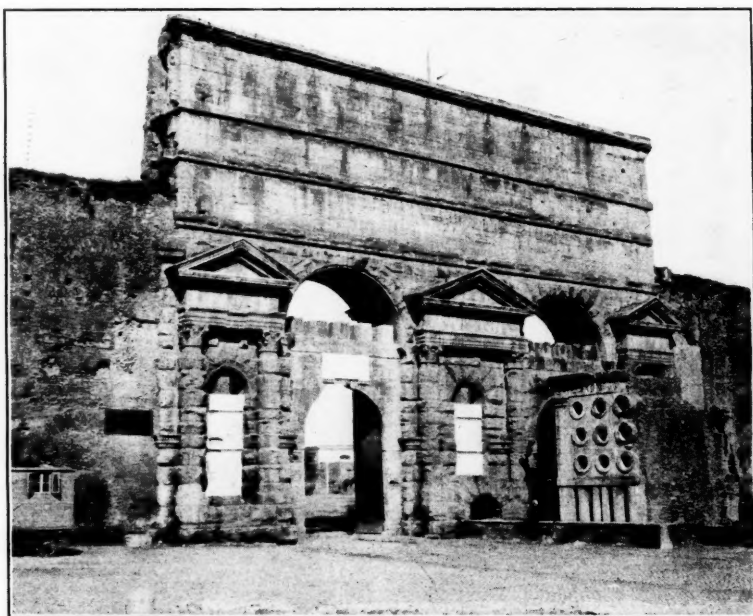
Midway between Rome and Præneste was a town called Gabii. It was Rome's earliest ally, and became of great strategical importance as an outpost against the Latins. In fact, the road I am now describing came out from Rome only as far as Gabii, and was called the Gabinian way, until the paramount importance of Præneste, to which it was later extended, gave its name to the whole road. Gabii occupied rather a peculiar situation in comparison with the rest of the Latin towns of any importance, for they were located on hilltops of some prominence. True, Gabii is fairly high, relatively, above the immediate country, but very low when one takes into consideration the level of the Campagna. Round a depression like a shallow volcanic crater there runs a narrow ridge, and at each end of the higher eastern side is a small plateau. Here was situated the town of Gabii, its citadel connected with the lower and more extensive part of town by a causeway cut along the top of the ridge in the solid rock. Gabii still deserves the slur cast upon it by the Romans for its desolate appearance. There is nothing there now but the mediæval tower and the miserable little hamlet of Castiglione. The Emperor Augustus used to go occasionally to Præneste for a few weeks, to enjoy the cool air, and, to give countenance to the once famed town of Gabii, he used always to leave Rome late enough so that he could stay over night there. The present King of Italy sometimes whirls out to Palestrina in his automobile to see some of the new archæological finds there, but the modern road sweeps around the ancient site of Gabii, and poor Castiglione gets none of the light of its sovereign's smile. The old Via Prænestina, along which our present quest takes us, skirts the low ridge where now all that remains of ancient Gabii is the causeway and a ruined temple, and the old quarries which supplied Rome with so much of the famous building stone, *lapis Gabinus*.



HOUSE FOUNDATIONS 2,500 YEARS OLD

Two miles beyond Gabii the modern road joins the ancient one, and for the rest of the way to Rome only chance bits of the old paving are seen. There are, however, several fine old cuts through the tufa ridges and hills, and several huge tombs in picturesque dilapidation. But whenever there is a valley to be crossed, then we find the old Roman bridge still there, and in good condition, too, for they were built to last, and they have needed small repairs these 2,000 years. The largest and finest of these bridges is the seven-arched Ponte di Nona, so called because it was near the ninth milestone on the road. As one comes on into Rome along the modern macadam road, which is as much dustier than the ancient as it is smoother, the domes and towers of the city show ever clearer against the evening sky, until about a mile from the city walls the road sinks into a wide depression, and Rome is lost to view, until suddenly, after a dismal mile between high vineyard and house walls, at the turn, the fine old Porta Maggiore looms up into view.

When the Emperor Aurelian found it imperative to have a new wall around Rome, and that quickly, he planned its course so that he could utilize everything that was along the line. The splendid arches



PORTA MAGGIORE AND THE BAKER'S TOMB

that carried the three aqueducts, Marcia, Tepula, and Julia, one above the other, were just the thing he wanted, as all that was needed was simply to wall up the openings. This was done, and an opening left for a gate, wherever a road passed under an arch. At this Porta Maggiore two arches were left to make a double gate for two roads, one being our Via Prænestina, that divided just inside the line of the new city wall. Above the gate still remains a large section of the channels of the three aqueducts. One can plainly see the openings where the water used to run. Outside the gate, between the two roads, a wealthy baker had chosen a site for his wife's tomb, and decided to have not only a novel mausoleum, but to combine devotion with a bit of advertising. The object with the 9 round holes in it in the foreground of the illustration is an exact reproduction of his finest bread baking oven. On this tomb he had carved this inscription: "Here lies my wife. She was the best woman that ever lived. Her remains I have put in this bread basket!"

One looks with amazement on the high double gate, and the strange tomb, and with envy on the man who sits there eating luscious Italian figs, but passes on through the gate, and suddenly realizes that the Via Prænestina is behind him, and that after all it is only another road that leads to Rome.

RALPH VAN DEMAN MAGOFFIN.

Johns Hopkins University.

DISCOVERY OF A STONE CIST IN ONTARIO

A UNIQUE archæological discovery—unique so far as Ontario is concerned at least—was that of a stone cist on the farm of T. M. Edmondson, near Streetsville, in Peel County (about 22 miles west of Toronto), in the fall of 1906. So far as we know, stone cists have been found only in Tennessee, Illinois, at points on the Delaware river, and in northern New Mexico.¹ Unfortunately, no human remains were found in the Streetsville cist, so it cannot definitely be said whether it was intended for purposes of sepulture or not. However, it has every appearance of being the work of human hands.

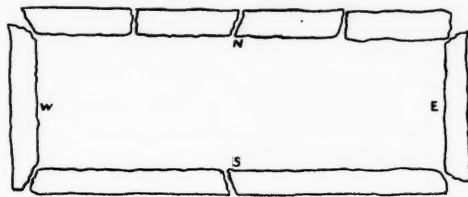


DIAGRAM OF THE STREETSVILLE CIST

As is shown in the accompanying diagram, one side of the chamber was formed of 2 slabs and the other of 4 slabs, while a single slab closed each end. The space enclosed was about 7 ft. long and a little over 1 ft. wide at the bottom. Owing, no doubt, to outside pressure of the earth, the side slabs inclined inward at the top, and were only about 6 or 8 in. apart. The depth of the chamber was $4\frac{1}{2}$ ft., and the floor was of clay. There were no cap stones, but these may have been removed in the course of cultivation years ago, and without discovering the side slabs whose tops were on a level with the surface of the ground. Perhaps, too, the structure had never been covered.

The stones are all limestones, and similar stones are numerous in the locality; the banks and bed of the Credit river being limestone. Mr. Boyle, the Provincial archæologist, who examined the structure in May, 1907, says that the slabs bear no marks of any attempt to shape them. On one or two of them he found glacial striae,

¹Attention might be called to an article on *Cairns or Stone Sepulchers of British Columbia and Washington*, by Harlan I. Smith, which appeared in *RECORDS OF THE PAST*, Volume III (1904), pp. 243-254. [Editor.]

and fossils on others. "Three of the stones," says Mr. Boyle, "were more columnar in shape, with roughly rounded ends uppermost, but these had been removed, and their position in the structure was not clearly noted when the first opening was made."²

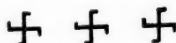
It seems significant that the general direction of the longest diameter of this cist is east and west, this being the case with many similar structures in the United States, although excavations carried on by the Bureau of Ethnology have shown that cists, as well as uninclosed bodies in mounds, were generally placed without regard to direction.

No material of human workmanship was found in the cist or in its vicinity—not even an arrowhead or a potsherd. If something of this nature had been met with, one could have formed some opinion as to its age—whether it is prehistoric or modern. Considering, also, that the bottom of the cist is clay, "it may be," as Mr. Boyle says, "that had a human body ever been placed in it, the remains have become wholly assimilated with the clay, but this is not at all likely."

It is to be hoped that further discoveries of a similar kind will be made, and that there will be an opportunity for Mr. Boyle, or some other capable archaeologist, to make an examination as soon as possible after the discovery.

W. J. WINTEMBERG.

Toronto, Canada.



MORE ABOUT THE "NEW SERPENT MOUND IN OHIO"

IN THE *American Anthropologist* for October-December, 1908 (pp. 703-704) Mr. Harlan I. Smith, of the American Museum of Natural History, New York City, denies the reality of the New Serpent Mound described in the RECORDS OF THE PAST for September-October, 1908, and figured in the following number from the survey of Dr. Metz.

First, Mr. Smith bases his denial upon the ground that Col. Charles Whittlesey, in "*Descriptions of Ancient Works in Ohio*," published in Vol. III of *Smithsonian Contributions to Knowledge*, Washington, 1850," gives a map of this area in which no serpent mound appears, and in his description says nothing about such a mound. Colonel Whittlesey's survey was made in 1839. This map Mr. Smith characterizes as "the most accurate published map of this site of which" he is aware.

Colonel Whittlesey's testimony would be of the very highest authority if it were explicit. But, in describing the map which he

²*Ontario Archaeological Report* for 1907, p. 30.

furnished to the Smithsonian Institution, he says, "The survey was made under circumstances that did not allow of a minute measurement of all parts of the work. Some of the details are given from an eye sketch, and this obstructed occasionally by a snowstorm" (p. 8). Of course, a map made under such circumstances cannot be adduced as evidence of any value. It has, however, perhaps been the means of diverting subsequent attention from the object.

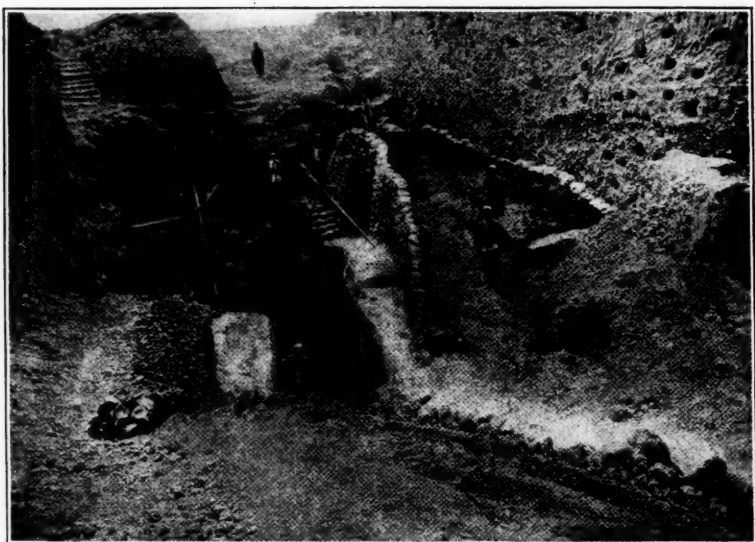
Secondly, as noted in our paper, Mr. Smith himself visited the mound with Dr. Metz in the fall of 1892 after the survey had been made in the previous June, when they together made a cross-section of the embankment lying in the woodland. Mr. Smith says in the *American Anthropologist* that his "personal explorations were confined to that portion lying within the maple forest * * * in fact [he says] I did not even attempt to trace the other embankments." It is difficult to see how such negative testimony can be of any value in the face of Dr. Metz's actual survey and of the testimony of the Committee of the Ohio Archæological Society who last fall examined the grounds under most favorable conditions and bear positive testimony to the facts as Dr. Metz has represented them.

Mr. Smith further states that "the people of the vicinity seem not to have been aware of their [portions of the mound in the meadow] existence, although they had been under cultivation for more than half a century." This statement we had positively contradicted in our original paper, calling attention to the fact that Dr. Scoville, of Lebanon, had published an account of it in a Cincinnati daily paper, and that it had been known and visited by local authorities for a long time.

In view of these facts, we cannot see why Mr. Smith should be moved to say, "There are so many mistakes in this article [in the RECORDS OF THE PAST], and it is so generally misleading, that it seems a duty to place on record the facts in the case for the benefit of future students who may not be familiar with the relative value of the testimony relating to this site." It is Mr. Smith, and not we, who has made the mistakes, and it is his statements that are likely to mislead the guileless public. The publication by the Smithsonian Institution of an imperfect map made by Colonel Whittlesey from memory of what he saw in a blinding snowstorm has probably misled many others besides Mr. Smith; while Mr. Smith's publication in the *American Antiquarian* for September, 1892, of his positive opinion based upon an examination of only half the phenomena has still further misguided the public. Such misrepresentations should not be allowed to go without correction.

G. FREDERICK WRIGHT.

Oberlin, O., March 4, 1909.

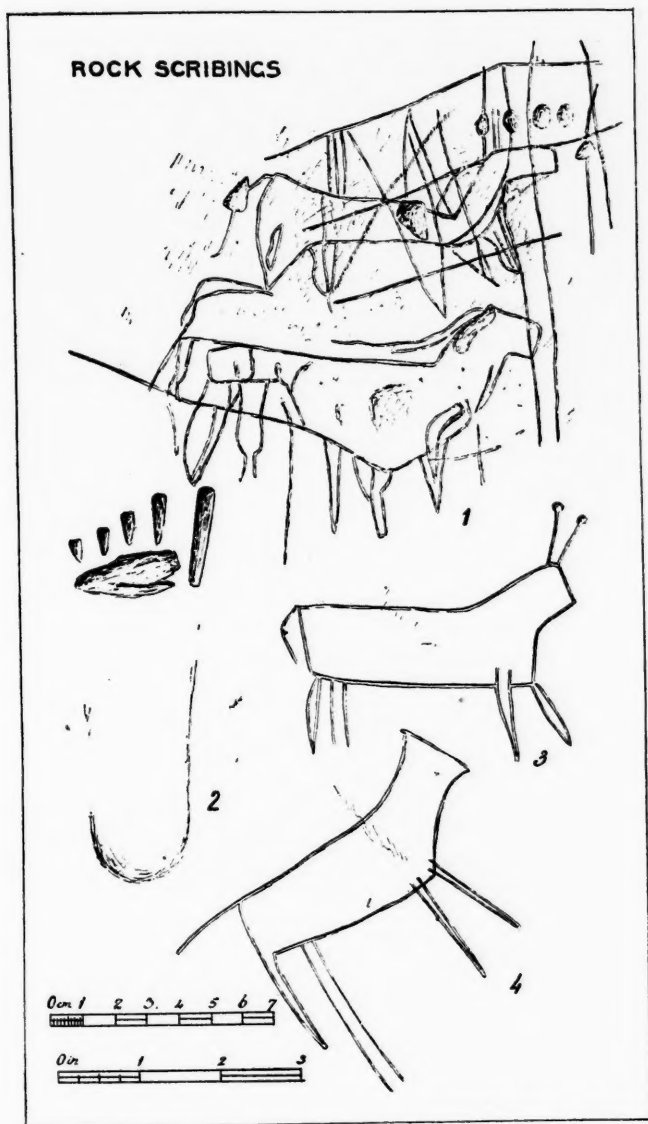


ENTRANCE TO THE TUNNEL AT GEZER, FROM THE NORTH
From Palestine Exploration Fund

WORK OF THE PALESTINE EXPLORATION FUND AT GEZER DURING 1908

IT WAS toward the end of 1907 that Mr. Stewart Macalister discovered the remarkable distinct tunnel, the entrance to which had been covered up for some 3,000 years, and which had then apparently been in use for more than 1,000, possibly nearly 2,000 years; and it was only at last, after clearing out the debris of centuries, that he found that it led down to a large cavern with a spring of water. Cut through rock with flint tools, this great tunnel, 23 ft. to 18 ft. high by 13 ft. wide, with its 80 steps, is the most remarkable work hitherto discovered of the inhabitants of Palestine in a remote antiquity. If Mr. Macalister's inference from the depth of debris at which the entrance was found be right, the very existence of the tunnel had become unknown before the time of Solomon.

The problem remains, "How did its constructors know that they should come to a spring?" One most curious fact, pointed out by the learned Père Vincent, is that a local tradition, mentioned long ago by Clermont-Gauneau, connects Gezer with the flood, which is said to have gushed forth from the "taunûr" (oven) of Gezer. Due west of the tunnel, and under 30 ft. of debris (representing 8 strata of distinct building epochs), was also found a remarkable cave. As only 3 of these strata are later than the destruction of the inner city wall



ROCK SCRIBINGS FROM GEZER
From Palestine Exploration Fund

about 1450 B. C., we are carried back to a high antiquity. The special interest of the cave lies in the "scribings" which occupy the upper surface of the walls. Some are mere lines at random, some dots arranged with method, others attempt the representation of animals. It is these last which are most interesting as drawings by an early race of men. They bear a strong resemblance to those in other places in Europe and elsewhere, recognized as the work of a race of the Palaeolithic epoch; but as they represent fauna of a subsequent period, it is assumed that they were executed by men of the Neolithic age.

Another discovery has been a singular example of foundation deposit, below the foundation of a building contemporary with the XII



THE ZODIAC TABLET FROM GEZER

From Palestine Exploration Fund

Egyptian dynasty. The skeletons of two men are placed, at length, side by side, and the upper half of the skeleton of a lad 16 or 17 years of age. This body had been cut in half above the pelvis, as in the case of a girl whose remains were found, some time before, in a cistern on the eastern hill of the city. In the present instance various earthen vessels had been placed about the bodies, as if for food.

It has always been a hope of the Society that the Gezer excavations might produce some such collection of written tablets as those at Tel el Amarna; but very few of such documents have been found, and these for the most part imperfect. The Zodiac tablet, so called, is the clay impression from a Babylonian cylinder seal. It has interested

many scholars, several of whom have contributed notes on it. The opinion seems to be that it may be of the Tel-el-Amarna period, possibly much older.

Another tablet, found at the close of the year 1908, was of limestone inscribed with Hebrew characters of probably the VI century B. C. or possibly much older, as Prof. Lidzbarski supposes. He says: "We have, perhaps, the oldest Hebrew inscription, at all events, one of the oldest of the Semitic inscriptions." It enumerates the agricultural occupations for several months, as "month of the first harvest," "month of the sowing," etc. Unfortunately, the edges are broken, so that it is incomplete.

A great variety of other small objects has been found; personal ornaments, pottery of various kinds and dates, and objects of alabaster and metal. Among the most curious of the pottery objects was the lower portion of the model of a shrine, the upper part being broken away. It to some extent resembles the Egyptian "soul-houses" which Professor Petrie described to your readers in July, 1907*. It was found in a deep stratum with other remains dated about 2,000 B. C.

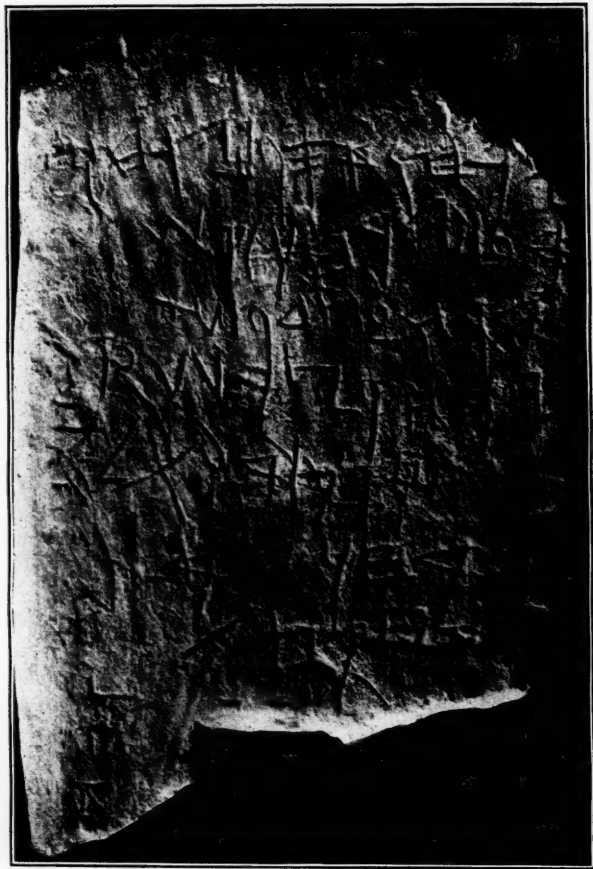


LEAD WEIGHT FROM GEZER

Two inscribed weights were found. One of lead, nearly square, was inscribed in Greek with the name of the "Renter of the market" and the date, "The year 33" of the Seleucid era, equivalent to B. C. 279. This lead weight has the distinction of being the only object actually inscribed with a date as yet found at Gezer.

It is unfortunate that, by the Turkish law, all objects found in excavating have to be given up to the Turkish authorities. The Palestine Exploration Fund strictly observes this law; but it deprives the Society of the great advantage which would accrue from exhibiting the objects in London. However, the best of them will find a place in the Imperial Museum at Constantinople, which has been much enlarged lately, and is becoming one of the most important in Europe.

*See RECORDS OF THE PAST, Vol. VI, pp. 195-201.



THE HEBREW TABLET FROM GEZER
From *Palestine Exploration Fund*

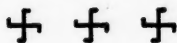
The Society's *Quarterly Statement* has, during the past year, contained many interesting articles, fully illustrated, in addition to Mr. Macalister's *Reports*, and those of experts on some of his "finds." One on the *Fisheries of Galilee*, by Dr. Masterman, should interest naturalists. Mr. Jennings-Bramley's account of the *Bedouin of the Sinaitic Peninsula* (among whom he lived for some time); Miss Gladys Dickson's papers on *Palestine Folklore* and on a local *Christian Treatise on Astrology*, and papers by other writers are all full of curious information. Mr. Dickie, who worked with Dr. Bliss a few years ago, has again visited Jerusalem, and carefully recorded the latest facts ascertained relating to Constantine's buildings in connection with the Church of the Holy Sepulcher; Dr. Masterman has described *Masada*, where the Jews made their last stand and were massacred; and Mr. Spyridonidis, the Greek architect, contributed a plan and photographs of the church erected, in Crusader times, over

Jacob's Well. Altogether, subscribers to the fund get ample material to interest them.

By the time this note is published, the Imperial permit for excavating Gezer will have expired, the great trenches will have been filled up, and the evidences of its long antiquity, after yielding up much knowledge of its ancient occupants, will again slumber under the protecting earth. The committee are already considering the selection of another site for examination.

J. D. CRACE.

Palestine Exploration Fund,
London and 42 Quincy St., Cambridge, Mass.



THE HIGH ARTISTIC POWER OF PRIMEVAL MAN

PROOF of the high intelligence of the earliest men is shown by their *artistic power*. Sir George Bell wrote a most valuable work,⁵¹ on the human hand, showing that it was the masterpiece of mechanical design. But the hand is more than this, it is the instrument which reveals the power and the glory of the human mind. Thus the charms of music, the wonders of sculpture, and the beauties of painting are all revelations of the grandeur of the human mind. The hand executes the purposes of the mind, and the hand of the ape reveals none of these marvels, because the animal does not possess the contriving and reasoning mind that is in man. Here is a genuine *crux* for all materialistic theories of evolution, and an impassable barrier between man and the lower animals. The ruder the instruments of the artist are, the more remarkable is his intelligence, if with such rough tools, he produces an accurate picture of the objects he copies.

The artistic skill of the earliest men is shown in two directions. First, by their *carvings*, and secondly, by their *engravings*.⁵² Their carvings were chiefly executed in ivory or reindeer horn, and were generally representations of animals. Figures of the mammoth and the reindeer, admirably carved out of horn or ivory have been brought to light from the caves of Bruniquel, Laugerie-Basse, and Mas d'Azil, in Central France and the Pyrenees.⁵³ The ivory and reindeer horn are carved to represent the animals with marvelous fidelity, the per-

⁵¹*Bridgewater Treatise*.

⁵²See an admirable account of these in the Proceedings of *The Smithsonian Institution* for 1898, by Mr. J. Wilson, entitled *Prehistoric Art*.

⁵³*Les Cavernes et leur Habitants*, by M. J. Fraipont, pp. 159, 160.

fection of Primeval Sculpture being said to be the head of a horse carved out of reindeer horn, and discovered in the cave of Mas d'Azil by M. Piette.⁵⁴ The carvings and statuettes of men and women in ivory are equally striking, those found in the cavern of Brassempouy in Western France representing the individuals *clothed*, and wearing a head-dress like an ancient Egyptian wig.⁵⁵ The drawings are equally remarkable. These are engraved on reindeer horn, slabs of slate, and plates of ivory. They portray figures of animals such as the reindeer, elephant, aurochs, horse, seal, bear, and fishes. We will select two specimens only. Upon a portion of reindeer horn, found in the cave of Montgaudier, are carved two gigantic serpents, their scales being depicted with surprising fidelity, and the convolutions of their bodies being engraved with an artistic skill which is most astonishing.⁵⁶ The other is an engraving of such beauty that it is admitted to be the finest specimen of prehistoric art. It is carved on a fragment of reindeer horn, and represents a reindeer feeding with its head upon the ground. The symmetry of the form and of the limbs is perfect, whilst the beauty of the head and of the horns cannot possibly be surpassed.⁵⁷ Of a similar excellence are the drawings of fishes, seals, bears, and whales, while the leaves of branches of trees are depicted with wonderful faithfulness and beauty. The *pictures* engraved on slabs of slate or horn are equally remarkable. One represents a man hunting an aurochs, the exactness of the picture of the animal being most wonderful. Another depicts a man attacked by a gigantic serpent. So marvelously correct and graphic are these engravings, that Professor Boyd Dawkins says of them in admiration: "The most clever sculptor of modern times would probably not succeed very much better if his graver were a splinter of flint, and stone and bone were the materials to be engraved."⁵⁸ This wonderful artistic power was entirely confined to the earliest men, and it died out with their disappearance. The men of the Neolithic Age, who succeeded the primitive men of the Quaternary Period, were neither artists nor sculptors. Also the men of the still later Bronze Age could not draw; it was only amongst the *oldest* men, who flourished at the *beginning* of the human race, that we find artistic perfection! Here is an unanswerable proof, of the high intellectual power, and of the lofty genius of the earliest men. Drawing, painting, and carving are proofs of the grandeur of the human intellect, and that these acquirements were possessed in such a high degree by the earliest men demonstrates that the *very earliest* human beings were as far removed from apes as are the cultured

⁵⁴*La France Préhistorique*, p. 71.

⁵⁵*Bulletin de la Société d'Anthropologie de Paris*, November-December, 1894.

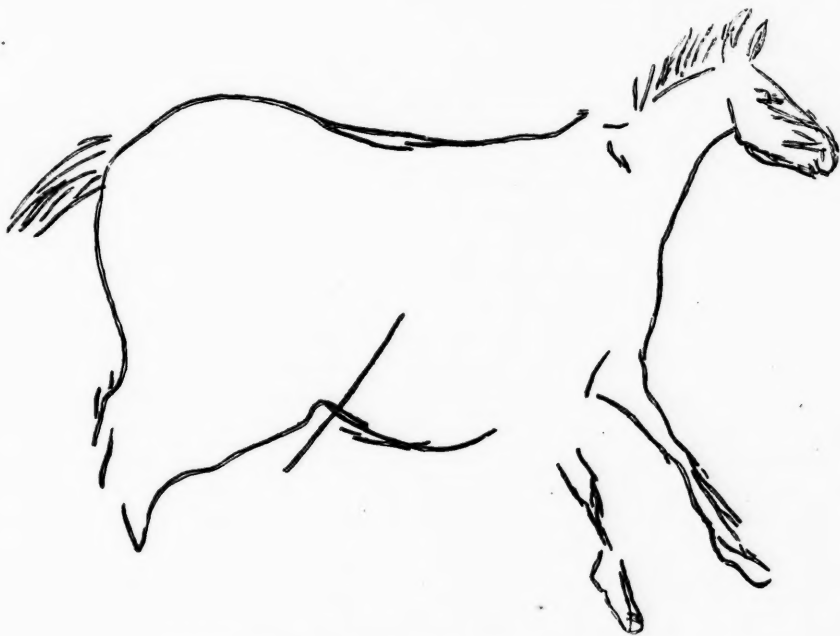
⁵⁶*La France Préhistorique*, p. 82. See RECORDS OF THE PAST, Vol. II, pp. 243-253, *The Mastodon and Mammoth Contemporary with Man*. The Lenape Stone and the Mammoth Carving from La Madeleine are here illustrated. Also see the illustration of Rock Scribings from Gezer, p. 79 of the present issue.

⁵⁷*Excavations at the Kesslerlock*, P. M. Merk, Pl. xii.

⁵⁸*Cave Hunting*, p. 344.

artists and sculptors of the present day. Rude and wild men, such as the Eskimo,⁵⁹ the Australians, and the Bushmen, draw and paint even now, but the earliest men far surpassed them all in artistic power.

One of the most difficult, as well as interesting of all the problems relating to the earliest men who lived in the Quaternary Period, is to decide whether they had any religion. Any evidence for this must of course be *indirect*, since we cannot expect to discover any traces of shrines, sanctuaries or ritual worship, whilst no traditions can possibly



HORSE ENGRAVED IN THE GROTTO LA MOUTHE

have descended to us from those far distant ages. It has been stoutly maintained that primitive man had no religion,⁶⁰ but the statement is a mere guess, and rests upon an utterly worthless foundation. Two statements alone are put forward to support it. The *first* is, that the lowest savages, who represent the state of primitive man have no religion, and therefore the earliest man must have been also devoid of religious belief. There are two errors here. Instead of the most degraded of savages representing the earliest state of man, we now know that they are the descendants of cultured ancestors. It is false

⁵⁹See a paper in the *Smithsonian Institution's Transactions* for 1897 by J. Hoffman, entitled *The Graphic Art of the Eskimos*.

⁶⁰By M. de Mortillet in *Le Préhistorique Antiquité de l'Homme*, p. 474.

also to say that the most brutal races of mankind have no religion, for it is now acknowledged that they are possessed of real religious beliefs. *Secondly*, it is affirmed that as religion is a *growth*, the earliest men could not possibly have possessed it. To this it may be replied that religion may have been a supernatural revelation, and as such may have been felt and practised by the very first members of the human race. But this must be decided by *evidence*, and we have to show that the discoveries of prehistoric archæology furnish us with proof that prehistoric man, in the Quaternary period, was, after all, not destitute of religion.

To begin with the way of burial in the earliest ages.⁶¹ The body was dressed elaborately and laid out with care. The face was painted, and the funeral robes were adorned with elaborate ornaments. Food was placed in the sepulcher, and weapons were deposited by the side of the deceased, to be used by him in another world. All this shows that primitive man believed in the immortality of the soul, and, as a necessary consequence, he must have acknowledged future rewards and punishments, dispensed by a supreme being.

Fetichism, as practised by the natives of Western Africa, and which attributes supernatural powers to sticks, stones, and brilliant objects, has been considered to be the lowest form of religion.⁶² This, however, is now known to be a complete mistake. The negroes of West Africa believe in one Supreme God, who created all things, who is also omnipotent and omniscient, and has a multitude of inferior deities under him.⁶³ Thus Fetichism is really *not* a low form of worship, but the expression of a lofty religious faith. Dupont found in the cave of Chaleux in Belgium a solitary bone of a mammoth lying among ashes and by the side of flint knives. From this he concluded, that the men of the time brought the bone into the cavern to worship it, as the mammoth was then extinct in Belgium.⁶⁴ This is a complete error, for later discoveries have proved that the mammoth was then living over the whole of Northern Europe. The numerous representations of animals such as horses, reindeer, and serpents, carved on the implements of the earliest men, have, with great probability, been considered to be totems,⁶⁵ representing the animal forms of the guardian spirits of the various tribes. Above all this, however, the American Indian believes in a Supreme God, to whom the lower spirits, represented by the totems, are subordinate. Such, it is very likely, was the faith of the earliest men.

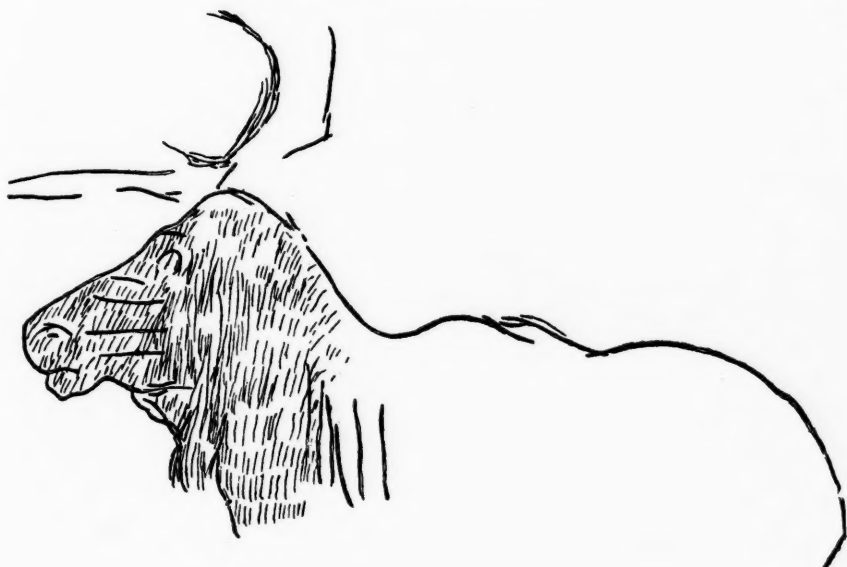
⁶¹The burials in the caves of Frontal, Duruthy, and Mentone prove this.

⁶²*Prehistoric Times*, by Lord Avebury, 6th Edition, pp. 556, 585.

⁶³See Max Müller's *Hibbert Lectures*, pp. 107, 108, and *The African Sketch Book*, by Winwood Read, Vol. II, p. 131.

⁶⁴*Etude sur les Cavernes des Bords de la Lesse et de la Meuse*, 1865, p. 21.

⁶⁵This idea is well worked out by Sir J. W. Dawson in his *Fossil Men*, Chap. ix.



DEER ENGRAVED IN THE GROTTO LA MOUTHE

The worship of the Sun is supposed to have been practised by the earliest men in the Quaternary Period, and some facts may be brought forward in support of this theory. M. Rochebrune states that all the caves which he explored in the Charente (France), which had been inhabited by primitive man, opened to the northeast.⁶⁶ This he declares was because the earliest men were sun worshippers, and chose for their habitations only those caverns from the mouths of which they could see and worship the rising sun.⁶⁷ This opinion is supported by the fact that on the plateaux, primitive man also selected for his places of abode, only those localities from which the rising sun was visible.⁶⁸ The sun, with rays spreading from its disc, was frequently carved on the staffs of office used by the earliest inhabitants of Northern Europe. Thus, M. Piette found in the cave of Gourdan in the Pyrenees, a disc pierced with a hole in the center, from the circumference of which proceed diverging lines.⁶⁹ He also discovered the same sign engraved three times on a wand of office or commander's baton, and concluded from this that it was an image of the Sun God. Possibly the baton was the wand of office which was carried by a priest

⁶⁶These caves are all in the basin of the Tardonère.

⁶⁷*Memoirs sur les Restes d'Industrie aux Temps Primodiaux de la Race Humaine recueillis dans le Département de la Charente*, par A. J. Rochebrune, pp. 26, 27.

⁶⁸*Ibid.*, p. 28.

⁶⁹Quatrefages in his *Human Species*, p. 328, describes this relic.

of the sun. M. Girod also figures a similar carving of the sun with diverging rays, which has been found in the cave of Laugerie-Basse in the Dordogne.⁷⁰ In these carvings the sun is represented in precisely the same manner as it is engraved by the North American Indians in the present day. These indications of sun worship are too numerous to be ignored, and they connect the rude worship of the men who hunted the elephant and rhinoceros in Northern Europe, with the most elaborate religious rites of ancient heathenism. The worship of the sun was in the earliest times identified with the adoration of the Supreme Being, and was probably the earliest form of idolatry, while it was practised simultaneously with the adoration of minor objects, such as trees, mountains, and various animals.

It is also interesting to note, that the earliest men whose relics have recently been brought to light, were not improbably worshippers of the serpent. In the cave of La Madelaine in the Dordogne, MM. Christy and Lartet found a part of a reindeer's horn, on one side of which was engraved a striking picture.⁷¹ A figure of a man occupies one end of the drawing, and his right hand is raised in a striking attitude. A horse stands close by his side, and another horse is behind the first, its head being turned towards the man. Immediately behind the man, is a gigantic serpent, which is the most prominent figure in the picture. It seems to be on the point of attacking the man, its attitude being most threatening. There are parallel lines around the serpent, which may perhaps represent the waves of the sea. What is the meaning of this remarkable picture, which was engraved by the men who hunted the elephant, the lion, and the rhinoceros, in Northern Europe? MM. Christy and Lartet declare that they are unable to understand it. Professor Boyd Dawkins thinks,⁷² that it portrays a man hunting horses, and that the serpentine figure represents a gigantic eel! This does not seem at all a probable solution. The horses are standing close by the man, and going *towards* him, which would not be the case if he were attacking them. They are clearly not *wild*, but *domesticated* horses. The serpentine figure cannot be an eel as it is too large, being three times the size of the man. Besides this, the eel being harmless, would not be drawn attacking the man. So small a creature as the eel would not be engraved at all. Sir J. W. Dawson suggests another explanation of the picture.⁷³ According to him it represents the migration of a man from the seashore, to an inland region, where he hunted wild horses. This solution cannot be accepted. The horses are going in a *different* direction from the man, and the explanation entirely passes over the threatening attitude of the immense serpent. The

⁷⁰*Les Invasions Paléolithiques*, Pl. xx.

⁷¹*Reliquiæ Aquitanicæ*, Book II, p. 16, Pl. ii.

⁷²*Early Man in Britain*, p. 214.

⁷³*Fossil Men and Their Modern Representatives*, p. 266.

engraving evidently represents a man sacrificing horses to the great serpent-god, and the parallel lines behind and around the serpent, mingled, as they are with vertical strokes, probably are intended for trees, in order to show that the sacrifice took place in the midst of a forest. This view explains everything in the picture, the serpent-being threatening the man because the serpent-divinity is offended at the man's conduct. Another striking proof of serpent worship in the earliest ages is found in the baton of Montgaudier.⁷⁴ This is a fragment of reindeer horn, which evidently belonged as a wand of office either to a chief or a priest. On one side of this baton two monstrous serpents are carved, their bodies, tails, and scales, being engraved with beautiful exactitude. Again, MM. Christy and Lartet found a figure of a serpent with its mouth open, and its scales depicted, in one of the caves of the Dordogne.⁷⁵ Now, why should the serpent be engraved on the wands of office used by the earliest men who inhabited Northern Europe? Certainly *not* because of its size, for in those days the actual serpent in those regions was most insignificant. The carved serpents are clearly *mythological*, and represent the Serpent Divinity. The worship of the serpent has been practised in all the human races, and must have been a rite performed from the infancy of humanity, in fact before the earliest men divided into distinct races. Fergusson, our greatest authority on the subject, states that it began on the banks of the Euphrates,⁷⁶ and he also declares that it is the oldest, and was at one time the most prevalent form of worship. Possibly it originated from a recollection of the temptation, in the Garden of Eden. The earliest men, therefore, that science shows to us were probably sun worshippers and serpent worshippers combined, and these two forms of religion have been constantly united in ancient and modern times. The semi-civilized Indians in Arizona and New Mexico worship the rattlesnake and adore the sun, and the same combined worship of the sun and the serpent prevailed amongst the Aztecs at the time of the Spanish conquest. Still earlier the Mound-builders of North America adored a gigantic serpent which they represented in the earthworks, as is witnessed by the great serpent mound, at Brush Creek, in Adams County in Ohio, which is 700 ft. in length.⁷⁷ A similar serpent mound, of immense antiquity, exists in Western Scotland.

The numerous carved and ornamented reindeer horns, which have been found with the relics of the earliest men in the caverns of France and Belgium, have been thought to be scepters of the chiefs, or wands of office, and have been called "batons of command." Sir William Dawson thinks,⁷⁸ however, that they were part of the implements of

⁷⁴Figured by Cartailhac in his *La France Préhistorique*, p. 82.

⁷⁵*Reliquie Aquitanica*, Pl. xxiv, p. 159, Fig. 4.

⁷⁶*Tree and Serpent Worship*, pp. vii, 36.

⁷⁷*Prehistoric America*, by the Marquis of Nadaillac, p. 126. RECORDS OF THE PAST, Vol. V, 1906, p. 119-128.

⁷⁸*Fossil Men*, p. 337.

the priests or "medicine men" of that time, or might have been used to beat the sacred drums as is the custom of the Shamans of Northern Siberia. If this is an indication that primitive man practised a religion allied to Shamanism, it proves that the earliest men held a pure and lofty religious creed, for the Shamans believe in one Supreme God, who has his dwelling in the highest heaven.⁷⁹

Be this as it may, it is now clearly demonstrated that primeval man had a religion. The possession of religion is a characteristic of man *alone*. The lower animals, however they may approach man in some elements of their physical structure, cannot have a religion, for their nature is incapable of comprehending or of practising it. It is plain therefore, that, by the possession of religion, the earliest men were as far removed from apes as are the men of the present day.

The admissions of the materialists regarding man's origin, and early condition, are truly extraordinary. They confess that in the present day no animal can be found connecting man and the apes. They admit, also, that the oldest men which geology reveals to us, were as far removed from apes as are the men who are living now. They acknowledge that no fossil ape has been found from which man could have descended.⁷⁹ Lastly, they admit that no intermediate forms between man and apes have been found in the very formations, in which, if their theory is true, they ought to have been discovered in great numbers! What have they to say in reply? Merely to *guess* that Tertiary man may some day be discovered, and to *assume* also that when he is found, he will prove to be more degraded than his brother Quaternary man! This dreaming and guessing is not science, and we merely reply in the words of Dr. Samuel Johnson: "He who will determine against that which he knows, because there may be something which he knows not,—he that can set hypothetical possibility against acknowledged certainty,—is not to be admitted among reasonable beings."⁸¹

We might produce further proofs of the mental greatness of the earliest men. We might describe their physical structure, their large brains, their robust constitutions, and their commercial activities. But it is needless. The subject need be discussed no further. Man was in the earliest ages the *lord of creation*, and the child of God. So it is now, for man is ever the same. However degraded man may be, the seal of the Divine Hand is upon him, and the witness of the Divine Nature is within him. His religious emotions, sadly perverted though they may be, lift his soul to One above. His marvelous imagination testifies to a genius which is not of this world. His conscience demonstrates that he is under a moral law, and is responsible to a Supreme Judge, who will call him to account for his

⁷⁹*Through Siberia*, by J. Stadling, pp. 137, 138.

⁸⁰*Pithecanthropus Erectus* of Dubois from Trinil in Java has collapsed in the most complete manner.

⁸¹*Rasselas*, Chap. xlviii.

actions. While his all-embracing reason, sweeping the very heavens in its flight and penetrating to distant worlds, proclaims in accents that can never be misunderstood, that he was made by God, must live for God, and is destined to enjoy the fellowship of God in an eternity of glory.

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Baldhu Vicarage, Scorrier, Cornwall.



SWASTIKA FROM KUL TEPE

NOTE ON THE SWASTIKA IN ASIA MINOR

SUPPLEMENTING the exhaustive article on this curious symbol of luck in *RECORDS OF THE PAST*, Vol. VI, pps. 236 ff., any observant resident of Asia Minor can testify to meeting occasional instances of the use of the Swastika on objects from the very earliest to the most recent times. It appears on rugs and saddle-bags. Not long ago I found a beautiful example in a neglected mosque yard carved on a marble stone beside an ox-head, and there was probably another Swastika originally on the other side of the head. A similar stone in the same village had two well-cut ox-heads with garlands or wreaths thrown over them, suggestive of the heathen honors offered Paul at Lystra, *Acts*, xiv: 13, consisting of sacrificial oxen and garlands. At Tash Keupru there is a medresse, or Turkish school, the material of which seems to have been gathered from the work of earlier hands, several Greek inscriptions being built into the walls, while over the door there is a clear-cut Swastika. Visitors to St. Sophia in Constantinople see abundant Swastikas on the walls of that building, which was erected under the brilliant Justinian, who became emperor 528 A. D. A friend of mine recently found in Sinope a beautiful though broken Swastika on a vase probably belonging to Roman art, and to be dated not long after the Christian era.

To go back to the days of Troy Dr. Schliemann's Swastika finds are famous. But the accompanying picture carries one vastly further

back—if there is no mistake. The original is on a fragment of pottery belonging to the Anatolia Archæological Club, and is painted as are the lines which also appear, with a dark brown pigment. The fragment of pottery is from Kul Tepe, near Cesarea Mazaca, and on the basis of cuneiform inscriptions found there and deciphered, Prof. Sayce lecturing at Oxford in May, 1907, pronounced the city to belong to the age of Abraham and Hammurabi. It was an Assyrian settlement transmitting the culture of Mesopotamia to Asia Minor. This bit of brickwork, therefore, was probably made and decorated about 4,000 years ago, and shows that the universal symbol of good luck was at that early day known and used in central Asia Minor.

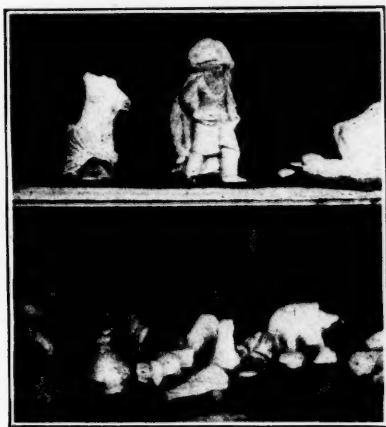
GEORGE E. WHITE.

Marsovan, Turkey-in-Asia.



VOLK'S WORK IN THE TRENTON GRAVELS.—Some of the most valuable work which has been done in this country relative to the solution of the problem of Glacial Man, is that of Mr. Ernest Volk, of Trenton, N. J. Unfortunately, his light is hid under a bushel because of the lack of funds for publishing the results of his 20 or more years of almost continuous effort. Regarding his work we will quote from the last report of the Peabody Museum of American Archæology and Ethnology of Harvard University:

"The researches in the Delaware Valley have been continued by Mr. Ernest Volk, who has carefully examined many excavations made in the gravel deposits and has worked with his trowel over a considerable space of the exposed sections. Several unquestionable implements of chipped stone have been found *in situ* in the gravel and further evidence has been obtained to prove that implements are found which are of the same age as the gravel deposit. It is only by such long-continued and painstaking work as Mr. Volk is engaged in that the much-discussed subject of the presence of palæolithic implements in the Trenton gravels is being settled; and for his persistence and conscientious labors to ascertain the exact facts and truth, American archæologists cannot be too grateful. The Museum has a full report from Mr. Volk, covering over 20 years of exploration in the Delaware Valley since he began his work under the direction of the Curator. The report is accompanied by a large number of photographs of the gravel sections, sand pits, and also of stone implements, and a human bone, and fragments of antlers, shown *in situ*, with diagrams and drawings. This full and important report should be published by the Museum, and it is regrettable that there are no funds available for the purpose at present."



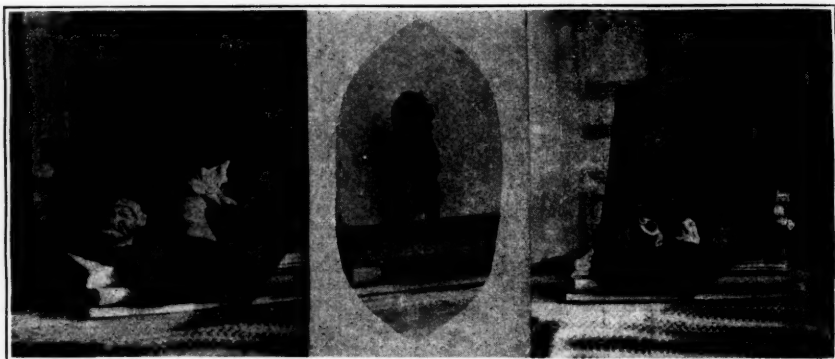
OBJECTS FROM KUL TEPE

KUL TEPE

A FEW miles northeast of Cesarea Cappadocia, is a mound, which for many years, has yielded an occasional object of interest, to the archaeologist, said objects being sold in the market place of Cesarea, or sometimes, turning up in the Constantinople bazaars.

This mound, which is called Kul Tepe (or hill of ashes), has never been properly excavated, and its contents have been for many years so disturbed and disarranged, that it will be a difficult task to make a scientific investigation. The peasants of the district use the earth of this mound as a fertilizer,—bringing away wagonloads of it, from one side or the other, and spreading it on their fields, every spring and fall. Then, if they happen to notice pieces of pottery, carving, or inscribed tablets in the earth (all badly broken usually by their careless spades) they pick these out, and sell them in the bazaars to whomsoever will buy.

Just gathering up a few things in one summer, spent in Cesarea, I have objects from so many different times and civilizations as to be quite bewildering. Perfect and beautiful celts of flint, and black stone, and even of jade—quantities of whorls, and of animals' heads and legs, in clay of all kinds and colors—are in my collection. There are many pieces of vases and dishes; several tablets inscribed in Cappadocian cuneiform; and Babylonian weights in hematite. The latter, are declared by Professor Carl Lehmann of Berlin, to be good Babylonian weights, one a gold shekel, and the other a half silver-shekel. There is one exquisite little bas-relief of a lion (4 cm. long), evidently



FIGURINES FROM KUL TEPE

Clay Head and a Figure Like a Gargoyle, an Ornament of an Altar	Asiatic Figure Carrying a Greek Lady	Bas-relief of Lion on Right. Clay Head, with Crown, to the Left
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Assyrian or Hittite, in fine red clay. And there is a seal cylinder of black marble, with Hittite pigtailed figures on it. One of these figures is spearing a dragon, and two seem to be smoking a pipe of peace (or would seem to be doing so, if there had been smoking in Hittite days). Then there are many bits of artistic clay work from Greek times—some of evidently the V century, B. C., and others, Hellenistic, Roman, and even Seljukian—all jumbled together in this place of memories. There are jars of clay, and glass bottles found in Kul Tepe, and among them there are what have been called “huts” of clay—such as the one on the lower shelf in the picture given (p. 95). Since some of these contained ashes, and a few bones more or less carbonized, it is supposed they were meant for human remains, and, like the Egyptian “soul houses,” are to be the place of some “shadowy existence after death.” At least such is the opinion of Ernest Chantres, who describes such a cinerary urn found at Kul Tepe. This French archaeologist made a journey through Cappadocia in 1893-4 and published a book on it in 1898. He heard of this mound, and took picks and shovels and 20 men to dig, and spent a few days in examining what he could of the mound. He made 6 trenches, and found beds of ashes, and great quantities of pottery, also enormous blocks of lava and scoria. Under the surface he found debris, which showed there had been walls and basements of houses. Very few large stones appeared; the houses had evidently been built of rubble, and clay or cement from the neighboring marshes. He found what seemed to be ramparts, like those at Tiryns and Mycenæ. The mound was about 20 metres in height, and 480 metres in diameter. There were some old cuttings which showed chambers 50 or 60 metres in size.

The classic name of Cesarea is Mazaca, but Ramsey and Sayce and Maspero, and others who have written on Cappadocia, consider that the Assyrian name of this city is Kus-da. In Assyrian tablets Kus-da is the place from which come horses and mules. Chantres thinks that this mound must be the remains of the older cities, before the Græco-Roman era when Mazaca became famous. He says that Scheil has published some tablets from Constantinople, which confirm this idea. And Professor Sayce has written lately of Kul Tepe, as an outpost of the Babylonian Empire.

Besides the many distinctly Assyrian, Babylonian, and Hittite objects found here, there are many clay figures, and vases, which are



OBJECTS FROM KUL TEPE. ON THE LOWEST SHELF IS A "SOUL HOUSE" OR PLACE FOR ASHES

like those found in Greece and the Greek Islands. In my collection there is a very finely executed head of Silenus (about 4 cm. in height) and a woman's figure partly draped, of good workmanship.

One of my Kul Tepe figurines is of so unique a character as to deserve further description. It represents a man, bearded, and clothed in trousers and a rolled girdle, carrying (perhaps over a muddy road) a woman, who comfortably places her hands on the servant's head, (if it is a servant), and whose body is partly supported by a roll of cloth, forming a sort of sling. The woman is as unmistakably Greek as the man is Asiatic. Her head is gone, and the figure is blackened with fire. But the hair of the man's beard, and the lines in his face

are delicately and finely executed, and the face has character. The man is 14 cm. high, and the whole group would be about 18 cm. if the woman's head were in place. Whether these figures represent some legend connected with the Istar cult, or some other religious scene, or simply a common domestic happening, I do not know.

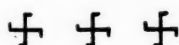
Among my Kul Tepe objects are several parts of birds, in clay and stone, and two decorations of rows of birds, conventionalized. Whether they are Hittite eagles (some certainly are eagles), or the doves sacred to Istar, is not always plain. Chantres says that no swastika was found at Kul Tepe, but I have a piece of red clay with a very plain swastika on it—about 3 cm. square. There are here also a number of little moulds of stone, one of which has the figure of a bird cut on it.

There are many beads or ornaments of chalcedony and other stone—some finely cut,—one with ridges, cut in it regularly, and then filled with a sort of white enamel, showing finely on the black stone.

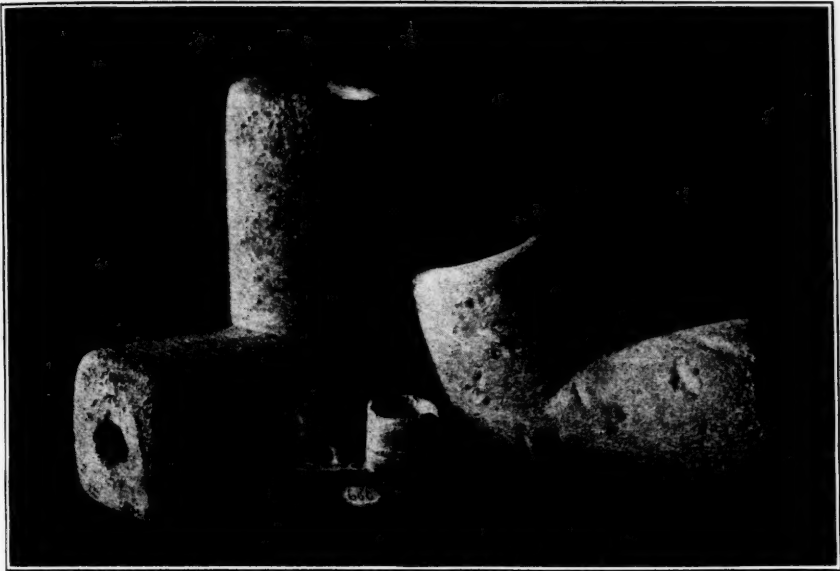
When such a varied assortment of objects come from one ancient mound, does it not seem as if careful investigation might here discover what would make a complete history of ancient civilization, and add more to our knowledge of the close connection between Assyria and Egypt, and between the Hittite and the Ancient Greek?

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LEADEN TOKENS FROM OXYRHYNCHUS.—Mr. J. G. Milne in a paper on *Leaden Tokens of Roman Times recently found at Oxyrhynchus*, Egypt, divides them into two classes; one with the bust of Athena on the obverse, and Victory on the reverse; the other with Nilus on the obverse and various representations on the reverse, as Athena, Surapis, Horus, Abundantia, Pietas, etc. From some of the billon (an alloy of gold and silver with a large proportion of copper or other base metal) and bronze coins found at Oxyrhynchus during 5 seasons, it appears that from the time of Augustus to Severus Alexander, the predominating currency there was bronze money, while from that time to the time of Diocletian, this was entirely superseded by billon money. A large number bear the initials of Oxyrhynchus, and dates such as are found on coins of Alexandria of Roman times, hence it seems possible that they served as token money from the middle to the end of the III century A. D. Mr. Milne considers these different from the ordinary lead tickets which were in common use in Egypt beginning from the time of Augustus for admission to games, commercial purposes, etc.



CALUMETS OR PEACE-PIPES

CALUMET

IN THE annual report of the Smithsonian Institution for 1897 Joseph D. McGuire has a paper on pipes which may be considered as authority as far as the pipes of the aborigines are concerned. Although tobacco at the present time is cultivated in nearly every country on the globe, it is known that it is indigenous to North America, and the islands of the Gulf and the coast. Columbus on his first voyage speaks of the people of Hispaniola as smoking, though the reference appears to relate to something in the nature of a cigar. He says, "The messengers found a great number of Indians, men and women, holding in their hands lighted brands of herbs of which they inhaled according to their custom." The natives of San Domingo called the wrapper or pipe in which the herb was placed *tobago* or *tobaco*, hence the specific botanical name tobacco. The Brazilians are said to have called the herb *petun*. Father Vimont (1642) speaks of giving visiting Iroquois some petun, or tobacco, and to each a handsome pipe to smoke it.

On a triangular piece of land bordered by Lakes Ontario, Erie and Huron dwelt a branch of the Huron Iroquois nation (whose prin-

cial source of revenue was the raising of tobacco) whose Indian name was Tionontaties, but were called Petuns or Tobacco Nation by the French. Undoubtedly the aborigines cultivated tobacco in a primitive way, and smoked the "herb" as cigars or in tubes of stone or clay. Many of these tubes are found among the relics of the Mound Builders and of their descendants. In the history of the Conquest of Mexico by De Solis (1684) mention is made of the incensing of Cortez by the Ambassadors blowing the smoke of herbs toward his person from tubes held in the mouth.

There is no doubt that tobacco was cultivated by the Mexicans in a limited way prior to the Spanish Conquest. Afterwards the Spaniards put the natives to work growing tobacco for which there was a constant and increasing demand.

Catlin, writing in 1833 says "The luxury of smoking is known to all of the North American Indians in their primitive state, even before they had any knowledge of tobacco. In their native state they are excessive smokers and many of them would seem to be smoking one-half of their lives. There are many weeds and leaves and barks of trees that are narcotics, and of spontaneous growth in their countries, which the Indians dry and pulverize, and carry in pouches and smoke to great excess—and which, in several of their languages, when thus prepared is called Kinnikinnik, and seems to consist of the inner bark of the sweet willow, which is first dried and pulverized by rubbing between the hands, and used with sumac."

The introduction of tobacco into England in 1589 is popularly attributed to Sir Walter Raleigh, but the facts are that it was introduced by Sir Ralph Lane, who was sent out by Sir Walter in 1585, returning in 1589 from his disastrous administration. It is said, however, that he had learned to smoke tobacco in Virginia and taught Raleigh. When the servant of the latter saw his master enveloped in smoke, supposing him to be on fire, dashed a pail of water over him. Raleigh, however, taught Queen Elizabeth to smoke.

The word Calumet, meaning peace-pipe of the Indians, is not an Indian word, but a corruption of the French word Chalumeau. The French gave it that name from a fancied resemblance to a Chalumeau, a long flute, or a blow-pipe.

Father Gravier describes the peace-pipe or calumet—"It is ornamented with the heads or necks of various birds, whose plumage is very handsome. They also add long feathers of green, red and other colors with which it is entirely covered." Gravier visited the Illinois in 1696. Father Lalumet in 1645 speaks of a Calumet made of pewter in the hands of the Hurons. Father Paul Raqueneau, in 1651, speaks of sending a stone Calumet to a Monsieur Couillar.

Van Curler gives the Mohawk name for tobacco as *Jank-u-ran-que* and for pipe *Ca-no-nou*. Marquette in his first voyage to the Illinois describes them as a warlike tribe, "who know no iron or

copper and have only stone knives." In speaking of the Calumet he says, "There is nothing more mysterious or more respected among them. Less honor is paid to crowns and sceptres of kings than the savages bestow upon this. It seems to be the god of peace and war, the arbiter of life and death. It has to be but carried upon one's person, and displayed, to enable one to walk through the midst of



LARGE CALUMET. PROBABLY THE JOHNSON-IROQUOIS CALUMET

enemies, who, in the hottest of the fight, lay down their arms when it is shown. For that reason the Illinois gave me one, to serve as a safeguard among all nations through whom I had to pass during my voyage. There is a Calumet for peace and one for war, which are distinguished solely by the color of the feathers with which they are adorned. Red is a sign of war. They also use it to put an end to

their disputes, to strengthen their alliances and to speak to strangers. It is fashioned from a red stone polished like marble and bored in such a manner that one end serves as a receptacle for the tobacco while the other fits into the stem; this is a stick two feet long, as thick as an ordinary cane, and bored through the middle. It is ornamented with the heads and necks of various birds, whose plumage is beautiful. To these they also add large feathers—red, green and other colors—wherewith the whole is adorned. They have great regard for it because they look upon it as the Calumet of the Sun and in fact, they offer it to the latter to smoke when they wish to obtain a calm, or rain or fine weather.

"They scruple to bathe themselves at the beginning of summer, or to eat fresh fruit until after they have performed the Calumet dance."

The material of which the bowls of the pipes spoken of above were made has been called, since 1832, catlinite for George Catlin, who discovered the cliff from which the Indians obtained the small blocks which they used to make pipes, Calumets and small ornaments.

An early writer says, "This red stone is found between layers of quartzite at Couteau des Prairies, Minn."

However, Catlin is the best authority on this material. He says, "The red stone of which these pipe bowls are made is, in my estimation, a great curiosity; inasmuch as I am sure it is a variety of Steatite (or soapstone) differing from that of any known European locality, and also from any locality in America, other than the one from which these pipes came; and which are all traceable, I have found, to one source; and that source as yet unvisited except by the Indians who describe it, everywhere, as a place of vast importance to the Indians, given them by the Great Spirit, for their pipes, and strictly forbidden to be used for anything else." [The fragments, however, seem to have been and are now, used for making beads and small ornaments.] [See Richmond Collection.]

The red stone from which Calumets are made is found in the celebrated Pipestone Quarry in Pipestone County, in the southwestern corner of Minnesota. An early account of this locality says, "There was a high bluff in which was a mass of red stone flecked with pinkish white, like porphyry, with this difference, that this of which we speak is soft as tufa. (It is said to be harder than gypsum but softer than marble.) It is covered with quartzite, and is found in layers about two inches thick. The stone works easily and resists a hot fire."

Referring again to the Calumet and its uses:— Sir William Johnson at a meeting of the Six Nations on February 23, 1756, gave them the largest pipe in America, made on purpose, and said to them: "Take this pipe to your great council chamber at Onondaga; let it hang there in view, and should you be wavering in your mind at any

time, take, and smoke out of it, and think of my advice given with it, and you will recover and think properly." And on July 23, 1758, in the proceedings of a council with "Pontiac" and Chiefs of the Ottawas, Pottawattamies, Hurons and Chippewas, the Chiefs being all seated, Sir William Johnson caused Pontiac's pipe to be lighted, which, being handed around by the interpreter to all present, he addressed him.

On September of the same year, at Fort Johnson, N. Y., the Mohawks of both castles, the Oneidas, Cayugas, and two Seneca sachems with the River Indians met in council, and sent to acquaint Sir William that they proposed to deliver the message agreed upon on the 18th to the Cherokee deputies. When Sir William came in and all were seated, the 4 Cherokees were introduced to the Council by Captain Montour, and taking seats in 4 chairs placed purposely for them, Sir William lighted the Calumet or pipe of peace and friendship, and after smoking a whiff, presented it to the 4 Cherokee deputies, holding it to them while each took a whiff, then the gentlemen present took it and Mr. Montour handed it to every Indian present. The tobacco from whence it was filled was put into a bag to be carried home with the Calumet by the Cherokees. As showing the then existing international jealousies, a desire was expressed at this meeting to keep a knowledge of it from the French.

Mention is made above of the Calumet presented to the Six Nations February 23, 1756, which was said to be the largest pipe in America," and again in 1758 at a very important treaty with the Cherokees, I have said that the Calumet of the Iroquois was *held to each* of the 4 Cherokee deputies to take a whiff and that the tobacco with which it was filled *together with the Calumet was given to the Cherokees to take home with them.*

The Calumet illustrated above came into my possession a few weeks ago. It is certainly a very large pipe, being 6 1-2 in. long, 6 in. high and the circumference of the bowl 10 in., weight 5 pounds; the largest Indian pipe that I know of. It is of granite and was once highly polished, but having been buried in the soil it shows signs of erosion and corrasion and its polish is lost except on one side. It was found on the bank of the Savannah River, *and in the Cherokee country*, after the disastrous flood in the South, during the month of August, 1908.

No man knows, no man can tell, whether it is the Sir William Johnson's Calumet or not, but I am inclined to claim that it is the largest Indian stone pipe in America, and unless a larger pipe is brought forward, the Johnson-Iroquois Calumet.

Incidentally, I will call to your mind that the Cherokees were Iroquois, that is they spoke the language of the Iroquois.

W. MAX REID.

Amsterdam, N. Y.



FIG. 1. LOOKING NORTH THROUGH THE WOODS TO EXTREME NORTHERN SUMMIT SHOWING MOUND IN FAR MIDDLE BACKGROUND. THE ROTTING STUMP IN FOREGROUND, A LARGE WHITE OAK, ONCE GREW ON MOUND OF OBSERVATION

Photo by H. Gates

TRACES OF A VANISHED RACE IN KANDIYOHI COUNTY MINNESOTA

ON ITS northwest shore, and south of where the south fork of the north branch of Crow River enters Green Lake, rises a series of densely wooded morainic hills swelling to a height varying from 50 to 125 ft., above the present water level. Ascending these hills boulders of red or gray granite, striated and moss grown, are now and then met with, thrusting their bulk through the till, while under the thick vegetable mold are found many fragments of water-worn rock.

An artificial mound, with trees of all sizes and ages growing out of it, is found on the summit of every one of these hills. So far, but three of these "summit mounds" have been opened and but one, in a measure, adequately excavated, owing to various retarding circumstances; but, even imperfectly as the work has been extended, the results thus far give promise of much that will be of interest.

In Fig. 1 we have a photograph taken from the summit of one of the higher hills of the group mentioned, looking through the intervening woods to the farthest hilltop north, where its mound



FIG. 2. CLOSE VIEW OF MOUND SEEN IN THE FAR MIDDLE BACKGROUND OF FIG. 1. NOTE THE NUMEROUS GROUPS OF TREES GROWING ON IT

Photo by H. Gates

is dimly visible closing in the center background. The rotting stump in the center foreground is that of a large white oak, formerly growing out of the northern declivity of the mound whence this view was taken.

Should we walk to this other summit we would find large trees in clustering groups flourishing out of the mound itself (Fig. 2). These trees, though large and vigorous, are the lusty successors of lustier sires, judged from the decaying remnants of an earlier forest encountered in digging up the mold.

The highest and largest "summit mound" of the series (Fig. 3), at an elevation of 125 ft. above Green Lake, is seen in the accompanying illustration. It is noteworthy that, from the undisturbed center of this mound springs the large and dense growth of trees seen in the middle foreground, while other groups close in upon it from all sides but the east.

These three mounds the writer hopes to open at an early date. They are at a higher elevation than the three opened on this side of the lake in 1907. Of these latter, the one shown in Fig. 4, yielded the most satisfactory results.

This mound was opened September 9, 1907, by the Rev. Anthon T. Gesner, of Faribault, Minn., and Mr. P. D. Gates, of Milwaukee, Wis. It is on the apex of a hill rising some 86 ft. above the

present water level, bearing the trees seen in Fig. 4, the center one of which is growing a little east by north of the middle of the mound.

After clearing away a thick layer of vegetable mold, and at a depth of more than 2 ft. beneath this cleared surface, the excavators uncovered over 25 boulders of various sizes arranged as shown in Fig. 5. This photograph was taken at 5:30 p. m., September 9, on a rainy evening, and before a stone of the structure had been disturbed. We are thus enabled to view this ancient hearth or altar just as its Amerindian builders left it.

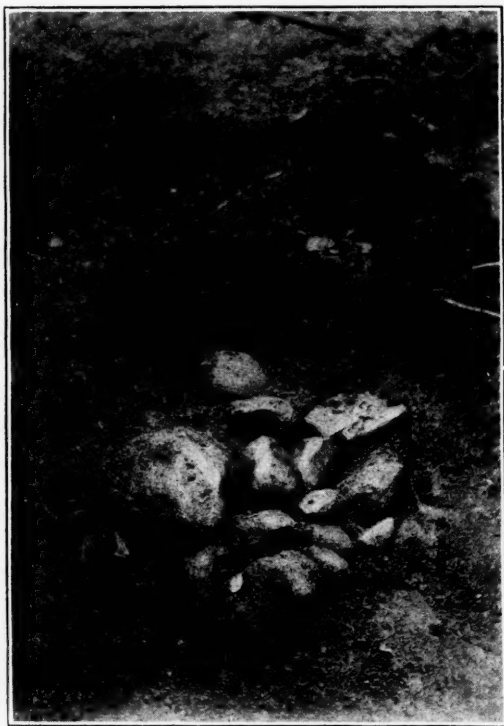


FIG 5. HEARTH OR ALTAR, IN SITU, ONCE SUBJECTED TO INTENSE HEAT. DISCOVERED IN CENTER OF MOUND, OVER 2 FT. BELOW SURFACE

Photo by H. Gates

We speak of it as hearth or altar; for it had been exposed to long continued and intense heat. Such of its stones as were not burnt red, were reduced to lime, or, otherwise calcined; while the surrounding earth was baked to the depth of several feet by the fires once glowing upon it. On the stones being carefully removed fragments of calcined bone and bits of charcoal were found in the interstices of the lower layers—these latter partially buried in a conglomerate of ashes, vitrified sand, and clay.



FIG. 3. THE HIGHEST SUMMIT MOUND OF THE SERIES, FROM THE EAST. OUT OF ITS CENTER GROWS A THICK GROUP OF TREES, AND OTHERS COVER NEARLY ITS ENTIRE AREA

Photo by H. Gates



FIG. 4. SUMMIT MOUND. THE STONES OF ALTAR OR HEARTH REMOVED FROM TRENCH, SEEN ABOUT BASE OF TREE GROWING ON MOUND NEAR ITS CENTER

Photo by H. Gates

Fig. 6 shows a vertical section of the north side of the trench—where a root of a tree, extending from the right horizontally to the white stone at the extreme left, marks the depth of the apex of the hearth from the cleared surface of the mound. At the north edge of the trench are piled the stones just as they were removed from their original position.

Further excavations were continued, and, at a depth of over a foot beneath the site of the first hearth, and after penetrating through soil burnt to a brick-like toughness, the remains of a second hearth were uncovered. Most of the boulders composing it being limestone,



FIG 6. PORTION OF NORTH SIDE OF TRENCH. HORIZONTAL ROOT EXTENDING TO WHITE STONE MARKS UPPER SURFACE LEVEL OF HEARTH BELOW THE GROUND

Photo by H. Gates

the fires had reduced a majority of them to fine powder, and numerous others to lumps of pure lime. (Fig. 7.) This second hearth or altar lay almost under the east half of the first one uncovered; but separated from it by over a foot of vitrified soil.

From this point westward the trench was dug $2\frac{3}{4}$ ft. deeper, until vestiges of what was regarded as the site of a third hearth were reached. Here the pick laid bare much disintegrated limestone mixed with burnt clay and fused fragments of quartz,

granites and schists. In the illustration (Fig. 7) this spot is indicated in the center of the immediate foreground, and at the deepest point of the excavation.

It is very evident that at the remote period when these mounds were erected, very few, if any of this morainic group of hills bore timber or undergrowth of any description. They form at their northeastern extension a peninsula, corresponding with, and exactly opposite to, the one jutting into the lake, on its northeast side described in our first paper. [Vol. V, pp. 271-281.] This mound site on the northwest side of the lake is washed on its northeast side by the lake itself,



FIG. 7. REMAINS OF A SECOND HEARTH OR ALTAR UNCOVERED AT DEPTH OF OVER A FOOT, AND A LITTLE TO THE EAST OF THE FIRST. MANY OF THE STONES CALCINED AND OTHERS FUSED BY THE HEAT. SUPPOSED SITE OF A THIRD HEARTH INDICATED BY CALCINED SPOT IN IMMEDIATE FOREGROUND

Photo by H. Gates

and on the northwest by the Crow river. In the period treated it was a much larger and deeper stream than now.

Whether the fires kindled on these summits were (a) for incineration of the dead; or (b) connected with heliolatry and human sacrifice or torture; or (c) for the preparation of food at certain tribal gatherings and feastings; or (d) whether these hearths pertain to earthen huts, whose walls caving in after abandonment, form now the super-

incumbent soil; or (e) the flames rising from these bare summits were beacons or signal fires flashing their messages over miles of lake and prairie, is left an open question.

As to the conjecture under (a) and (b)—that the mounds may have served as funeral pyres, or, were connected with heliolatry, human sacrifice or torture—no remains of bones have been found—calcined or otherwise—that can be, with certainty, identified as human; while, as to the theory advanced under (c) and (d), that the mounds so far excavated (Fig. 7) may have been a rendezvous for tribal gatherings and feastings, or the ruined sites of abandoned earthen huts, there is no corroborative evidence, either in the characteristic and ever-present refuse heap, contiguous to such spots, or other collateral vestiges of such use or habitation. There remains, however, the supposition under (e), or (b), which would make this site excavated that of a signal fire or torture mound. There is about as much evidence for as against this theory at this present stage of the investigation.

Not until all the hilltops in this group are thoroughly and systematically excavated, and possibly not even then, will sufficient data be available for a solution of the problems of which these particular traces of a vanished race are suggestive.

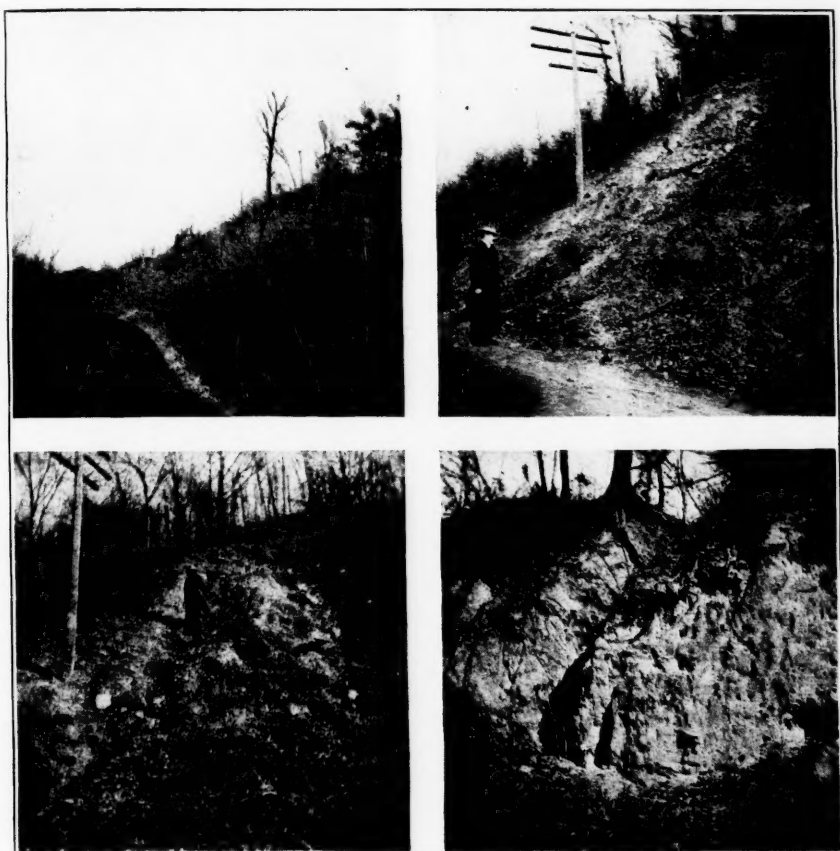
HORATIO GATES.

The Rectory, Willmar, Minn.



ANOTHER PALAEO LITHIC IMPLEMENT AND POSSIBLY AN EOLITH FROM NORTHWESTERN MISSOURI

BOTH of these recent discoveries are from the west slope of the bluff of the Missouri River, and special interest may be justly claimed for them because they are not from the loess but from the glacial drift which ante-dates it. The palæolith was purchased from the discoverer by an enthusiastic local collector, Mr. Geo. Y. Hull, and reported to me with a description of the locality and circumstances of the find. The facts as stated may be accepted with confidence. The date was about the middle of July, 1908, the exact day not being remembered; and the locality was the public road to the village of Amizonia at a point about 8 miles north of St. Joseph. This is known as the River road to distinguish it from one following the hilltops and called the Bluff road. The River road closely follows the base of the bluff and marks the limit of the rich black alluvium of the old flood-plain or "bottom land." In wet weather vehicles sink to such a depth in the soft mud that this road becomes entirely impassable, so it seems almost superfluous to state that any article of considerable density would require little time to work down many



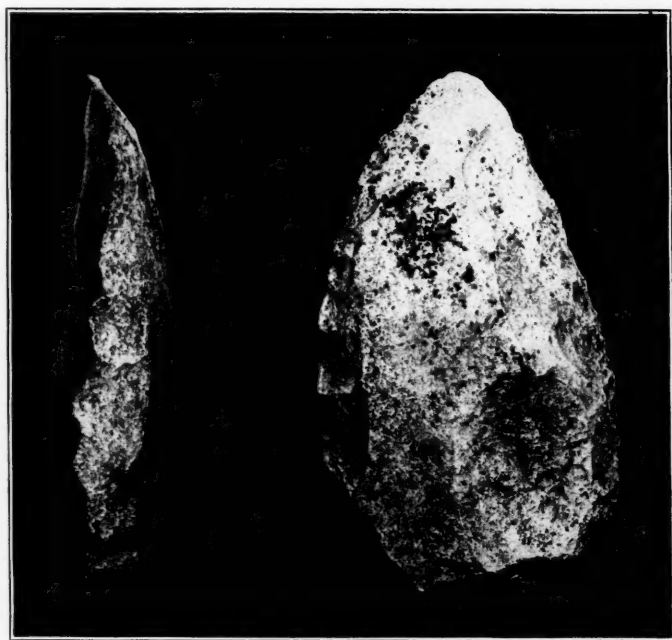
VIEWS OF THE BLUFF NEAR AMIZONIA WHERE THE PALÆOLITH WAS FOUND

inches beneath the surface. In the early part of the summer of 1908 the condition was improved in places by slightly raising the grade and filling depressions, the material required being secured with ease and convenience from the adjacent slope of the bluff. This disturbance of the natural surface caused a heavy wash to occur during the first severe storm which obstructed the road to such an extent that it had to be cleared. One of the workers thus employed, a reputable farmer working out his road tax, seeing the implement fall from a scraper secured it and two months later sold it to Mr. Hull.

We visited the locality on December 20, 1908, and found it just as described; and also noted that no further wash had occurred although the evidence of that reported is unmistakably distinct as shown in the photographs taken then. To our surprise, however, the exposure is not loess as had been expected, but an unusually wide

expanse of glacial drift extending at least a quarter of a mile in either direction and containing many boulders of granite and other transported rocks of sizes sufficient, the angle of the slope being considered, to indicate the undisturbed condition of an original deposit. The palæolithic implement was picked up in the road at a point near where the figure stands in the photograph.

It may not be out of place here to call attention to the interesting fact that this section of the bluff extending in a northwest and southeast direction in a slightly curving line presents an inviting surface to a southwest wind for the deposition of loess if that formation is, as some believe, a present-day accumulation carried from exposed sand



PALAEOLITH FROM AMIZONIA

bars by æolian agency. That no such recent deposit has formed a mantle there seems to open a question for reasonable inquiry.

A quarter of a mile beyond where the palæolith was found we paused to examine an exposure of stratified drift in a perpendicular cut in the face of the bluff left by gatherers of road material. Here are several three-inch bands of many-colored drift pebbles separated by foot-wide strata of till resembling loess and forming a combination that presents a striking appearance. My companion called attention to a projecting point of yellow jasper near my hand which he said bore the appearance of human workmanship, and requested me to extract

it so as to be able to vouch for its genuineness. Although small it was so firmly fixed in place that several pebbles were dislodged with it, which made room for a handkerchief to mark the spot in a photograph.* Examination and comparison with the natural cleavage of a similar jasper fragment found close by strengthened the belief that the chipping was artificial, and it was accordingly sent to Prof. George Frederick Wright, to whom the palæolith here described and one taken from undisturbed loess a year previous had already been sent, and was presented before the Section of Anthropology at the Baltimore meeting of the American Association for the Advancement of Science in December last.

LUELLA A. OWEN.

St. Joseph, Mo.



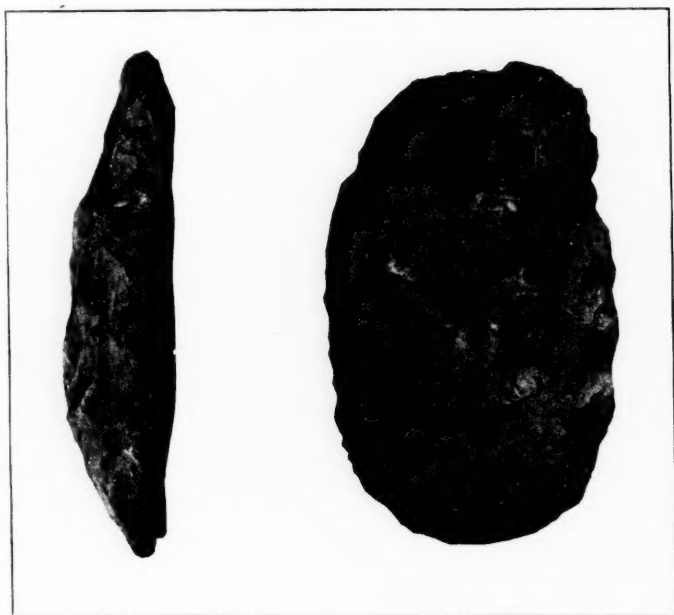
THE WADSWORTH PALÆOLITH

AT THE Anthropological meeting in connection with the A. A. A. S. at Baltimore, Prof. G. Frederick Wright exhibited three recently discovered implements whose date is supposed to go back to the glacial period. One was that described and figured in the RECORDS OF THE PAST, by Miss Luella A. Owen, on page 291, Volume VI. This was found in the undisturbed loess of St. Joseph, 20 ft. or more below the surface and the evidence respecting the discovery is all that could be asked. The second implement also came from St. Joseph through the instrumentality of Miss Owen, who will herself soon give a full account of its discovery. It is sufficient here to say that it is of the same palæolithic type as the previous one noticed by her and is of flint which has been deeply oxidized and discolored. The third implement is the one of which we here give an illustration. This is not in all respects of the typical shape of the palæolithic implements but many palæolithic forms are very similar to it. The implement is of flint like that obtained at Flint Ridge in Ohio, and has some resemblance in shape to the flint discs which were found cached by the thousands in the mounds of southern Ohio. In some respects it also resembles those discs, but is more nearly palæolithic in type.

The implement was found in a gravel pit on the west side of the river Styx, in Wadsworth Township, Medina County, Ohio, only 3 or 4 miles south of the watershed between the Ohio and Lake Erie. The gravel pit is one of great interest because it is in, not an ordinary river terrace or delta, but in what is technically called a "kame" or "esker" terrace. Although the watershed is so near and the river

*The spot was only 6 ft. above the level of the road, and the overlying strata can be identified with certainty as an undisturbed deposit.

Styx is but a mere dribble, the valley through which it meanders is a mile in width cut in a rocky plateau which is about 200 ft. above the present flood plain. The watershed, also, is here determined by glacial accumulations of unknown but probably great depth and leads into an equally wide valley to the north. Evidently, we have here a preglacial valley which was occupied by glacial ice. The kame terrace runs along on the flanks of the western border about half way between the flood plain and the summit. It is composed of coarsely bedded material indicating a tumultuous flow of water and was evidently formed by a stream which was kept up to that level by the unmelted mass of ice that filled the valley of the Styx to the east of it.

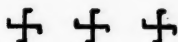


PALAEOLITH FROM WADSWORTH, OHIO

It is precisely such a gravel deposit as Professor Russel has photographed as in process of formation between the edge of the Malaspina glacier and the flanks of Mt. St. Elias in Alaska. In no other place has so interesting an example of this class of glacial deposits been observed.

The evidence, however, that this implement came from an undisturbed strata of the gravel is not as clear as might be wished. It was found by a workman and came into possession of Capt. T. D. Wolback, some years ago, but was brought to public notice by Mr. John O. Lacey, who ascertained that it was found lying on the floor of the large excavation which had been made in the bank and may possibly have fallen

from the surface which is some 25 or 30 ft. above the base of the excavations. The probability that it came from the undisturbed gravel arises from the fact that the implement is so different in form from the great numbers that have been gathered from the surface and that it is covered with patena precisely like that found on palæolithic implements, and that in a large collection of implements gathered by a farmer nearby another one similar to this in every respect had been obtained by him in this same terrace a short distance away. If these implements came from this undisturbed gravel they are very nearly contemporaneous with the one found by Mr. W. C. Mills, some years ago at Newcomerstown, Ohio.



RECENT VARIATIONS OF GLACIERS

A PROPOS of Dr. Penck's estimates of the time necessary to produce the glacial variations which have taken place since the cavern at Wildkirchli, Canton Appenzell, Switzerland,* was first occupied by man, it will be instructive to recall the evidence showing the rapidity with which great changes in glacial conditions have taken place in various localities.

Among the most instructive and striking of these changes are those which have taken place during the past 100 years in the Muir Glacier of Alaska. The first detailed study of this glacier was made by a party which accompanied me to the glacier in 1886, when a month was spent in making detailed observations. In my report of the results of this expedition,¹ abundant evidence was presented to show that the glacier had receded 15 or 20 miles since Vancouver explored the coast in 1794, and that the thickness of the ice at what was the ice front in 1886 had diminished by fully 2,000 ft. during that time. All subsequent investigations have confirmed this conclusion.

Prof. Harry Fielding Reid, who spent much time investigating the glacier from 1890 to 1892, fully accepted my inferences,² and, on comparing photographs which I brought back with those taken by him, concludes that in "the four years from 1886 to 1890 the western end of the ice front has receded 1,200 yards and the eastern end 750 yards. The center also has receded about 1,200 yards, so that the average recession of the ice front is a little over 1,000 yards in the four years, or, say a mile in seven years. * * * It does not seem at all incredible that the ice from the various glaciers of Glacier Bay may have united to fill a large part of the bay a hundred years ago."³

*See *Penck on the Antiquity of Man*, RECORDS OF THE PAST, Vol. VIII (1909), pp. 33-38.

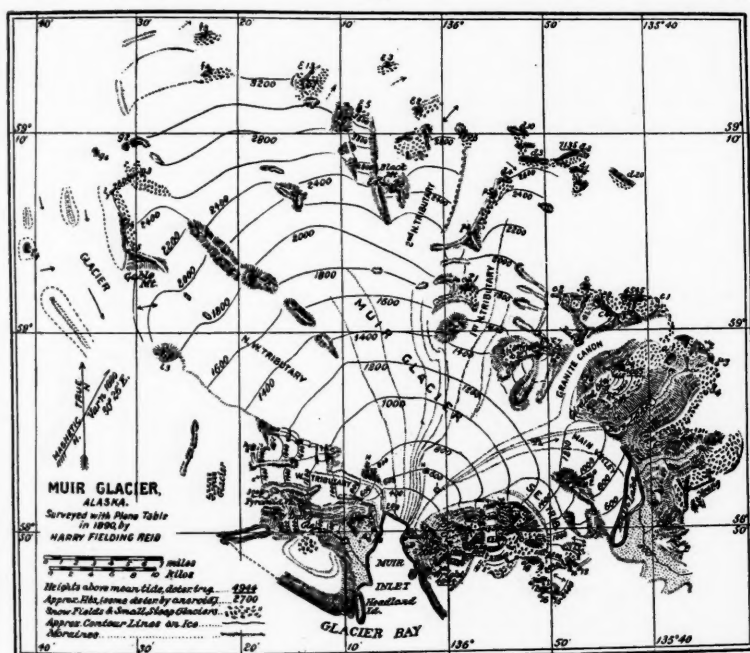
¹*Ice Age in North America*, chap. iii.

²*National Geographic Magazine*, Vol. iv (1892), pp. 19-84.

³*National Geographic Magazine*, loc. cit., p. 41.

Briefly summarized, the proof of this conclusion is:

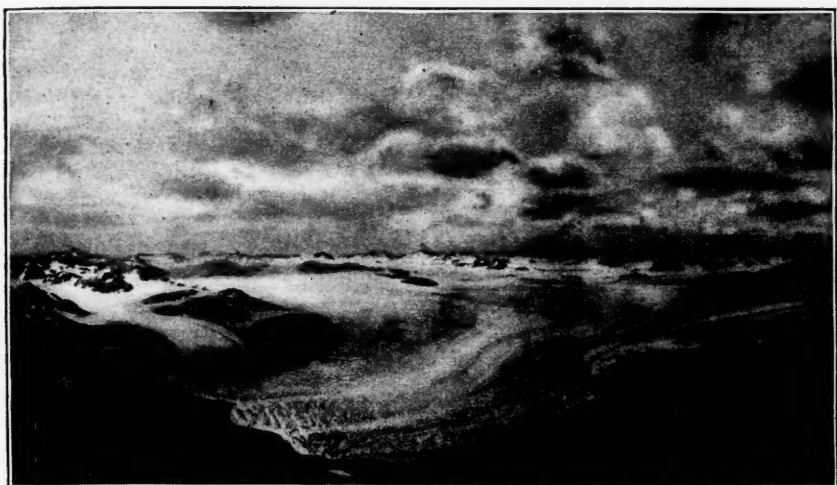
1. The absence of forest in the upper part of Glacier Bay. There are abundant forests of spruce at the mouth of the bay, 20 miles below, but none at the head of the bay, and they gradually diminish from the mouth to the head of the bay, as if slowly following up a retreating ice front. At the same time it is clearly evident that there was recently an interglacial epoch, which could not have been more than 200 or 300 years ago. For there was in 1886 an extensive forest of standing trees just below the terminus of the glacier completely buried in deposits of sand and gravel, which had recently been overridden by an advancing ice sheet. These trees had grown with their roots in an earlier glacial deposit. A large amount of wood, consisting of



portions of trees of considerable size, had also been brought down on the moraine from portions of the glacial field now entirely bare of trees.

2. The sides of the inlet and of the islands projecting from the surface of the water in it are highly polished and finely striated by a glacial movement in the direction of the axis of the bay up to a height of at least 2,000 ft. So fresh are these surfaces that they could not have been exposed for any very long period to the disintegrating agencies of that severe climate.

3. The streams which come down the flanks of the mountain on the east side and enter the inlet near the glacier front are very active in depositing deltas at the base of the mountain, but those deltas are so small that only a few years would have been required to produce them.



MUIR GLACIER IN 1897



MUIR GLACIER IN 1906

But it no longer seems necessary to adduce this evidence, since the most recent investigations, following those of Professor Reid, show that the glacier has continued to recede until the front is now fully 7 miles farther up the inlet than it was in 1886. In 1897 Messrs. F. E. and C. W. Wright made an official survey of the glacier, and they report that since 1892 the glacier has receded 33,000 ft., which would make 36,000 ft. since my survey, or, in round numbers, a distance of 7 miles in 20 years.

Prof. I. C. Russell, who fully concurs in the estimates given concerning the recession of Muir Glacier, makes the following state-

five or six miles beyond their present position at the time of Malaspina's and Puget's visits, and were then united so as to completely block the entrance to Disenchantment Bay, which is a continuation of Yakutat Bay. These observations show conclusively that the glaciers mentioned have retreated five or six miles within the past 100 years. The small recession that has here taken place, in comparison with the changes reported in Glacier Bay, during the same time, is probably due to the fact that the névé from which Muir Glacier flows is much lower than the snow fields drained by the Hubbard and Turner glaciers, and presumably more sensitive to climatic changes."⁴

What is still more remarkable concerning the glaciers in the vicinity of Yakutat Bay is that in 1906 they suddenly took a start forward. The facts are thus summarized by Prof. Ralph S. Tarr, who, in 1905 and 1906, surveyed the region under commission of the United States Geological Survey:

"The facts above stated for individual glaciers show that there is a remarkable change in progress in at least several of the main valley glaciers of the Yakutat Bay region. This change is in the nature of a paroxysmal thrust, as a result of which the ice is badly broken, as if a push from behind had been applied with such vigor as to break the rigid, resisting ice-mass in front. The effect of this thrust is in each case felt from far up the mountain valley well down toward the terminus of the glacier, and, in the case of Marvin Glacier, to the very end."⁵

In general, also, it may be said that the glaciers in North America are receding, though in a very irregular manner. But in one or two other instances, besides these mentioned by Professor Tarr, there is a spasmodic advance the cause of which is not apparent. So numerous and so extensive have been these known recent variations in the magnitude of existing glaciers that it is evidently not safe to base chronological calculations on the extent of their occurrences in past time.

It is worthy of note, also, that, according to Prof. Harry Fielding Reid, Agassiz⁶ calls attention to the fact that in the Alps themselves there have been noteworthy variations of the glaciers on a large scale during the last few centuries. "During the Middle Ages, from perhaps the X to XVI centuries, the glaciers of the Alps were much less extensive than at present, and horses were able to cross passes now considered difficult by mountaineers. During the XVII and XVIII centuries the glaciers increased, attaining their greatest extent in the beginning of this [nineteenth] century. At present they are in general retreating. This shows a variation almost as great and almost as rapid as that mentioned for the glaciers of Glacier Bay."⁷

Oberlin, O.

G. FREDERICK WRIGHT.

⁴*Glaciers of North America*, pp. 152, 153.

⁵*Bulletin of the Geological Society of America*, Vol. xviii, pp. 277, 278.

⁶*Etudes sur les Glaciers*, 1840, chap. xvi.

⁷*National Geographic Magazine*, loc. cit., pp. 39, 40.

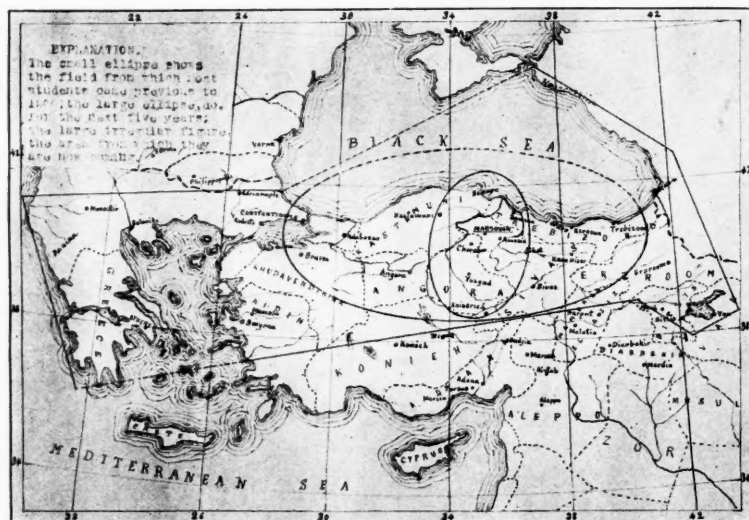
ANATOLIA ARCHAEOLOGICAL CLUB OF MARSOVAN, ASIA MINOR

IN THE very heart of the ancient Hittite region there is growing a flourishing and active local archaeological society which is worthy of special attention, because of its location, enterprise and future possibilities. Our regular contributor, George E. White, is one of the most active of their members. In reply to our inquiry concerning this club we received the following letter from him, which we quote in full:

Marsovan, Turkey, January 18, 1909.

Mr. F. B. Wright, Editor Records of the Past, Washington:

My Dear Sir: Your favor of November 14 with its inquiry concerning the Anatolia Archaeological Club came duly to hand. Our



MAP SHOWING THE LOCATION OF MARSOVAN

little society was formed 7 years ago, and most of this time has had an active and associate membership of 60 or more, and an attendance of 50 to 80 at the quarterly meetings. The active members are chiefly American missionaries resident here, or teachers in Anatolia College or the Girls' Boarding School. The associates are students of the upper classes. Each member who removes elsewhere is enrolled as an honorary member, and we have a number of other honorary members, of whom the most famous is Prof. A. H. Sayce, whose correspondence has been very helpful to us.

Archæological material lies thick about us, and the club programs, which are very informal, are made up partly of information drawn from books and papers, and partly from reports by different persons of what they have observed at their homes or when journeying. With the fees we are collecting a library, and have now nearly 100 volumes in several different languages, and collections of manuscripts and pictures are being made up. We have also a small but growing museum of antiquities, the most valuable single object being a Boghaz-keuy cuneiform tablet¹ containing a list of offerings to the god Khiba, who is mentioned in the contemporary Tel-el-Amarna tablets as worshiped in Jerusalem. This tablet was published by Professor Sayce through the Royal Asiatic Society in October, 1907. We are in the old Hittite region and near to Boghaz-keuy, its great center, so we have been especially interested in the rediscovery of the Hittites and the reconstruction of their history now in progress, but, of course, we are all amateurs at archæology, not specialists. We find RECORDS OF THE PAST very helpful.

Sincerely yours,

G. E. WHITE.

A society with such energy and such members as Mr. White deserves encouragement and we would suggest that in no place could financial assistance bring greater proportional results than through this society. They are in the field with Hittite mounds and other ancient ruins on every hand.² They have an active society with some members who, despite their disclaimer, are worthy to be classed on a level, if not above, many "specialists." They know the natives and their language, which is an important requisite for success in such a country. When all these advantages are considered, we feel like suggesting to some of our readers who do not have enormous sums to devote to archæological research but who are interested in furthering such work, that they communicate with Rev. George E. White, Anatolia College, Marsovan, Turkey-in-Asia, regarding the archæological profit to be derived from a moderate investment in that field. We should add that this suggestion is original with us and made without the knowledge of any member of the Anatolia Archæological Club, a society which we hope will live long and prosper.

FREDERICK BENNETT WRIGHT.

Washington, D. C.

¹See RECORDS OF THE PAST for 1907, p. 253.

²See RECORDS OF THE PAST for 1908, Vol. vii, pp. 267-274.

BOOK REVIEWS

SOCIAL LIFE AT ROME IN THE AGE OF CICERO¹

WHAT Professor Tucker's *Life in Ancient Athens* and Seymour's *Life in the Homeric Age* have done to acquaint us with social customs of the Greeks of these periods, Prof. W. Warde Fowler's book on *Social Life at Rome in the Age of Cicero* will do to bring vividly before us the Romans of Cicero's time. The object of the book is thus stated in the *Prefatory Note*: "It is merely an attempt to supply an educational want. At our schools and universities we read the great writers of the last age of the Republic, and learn something of its political and constitutional history; but there is no book in our language which supplies a picture of life and manners, of education, morals and religion in that intensely interesting period. * * * The age of Cicero is in some ways at least as important as any period of the empire; it is a critical moment in the history of Græco-Roman civilization. And in the Ciceronian correspondence, of more than 900 contemporary letters, we have the richest treasure house of social life that has survived from any period of classical antiquity." (p. vii.)

One remark in his *Prefatory Note* meets with our especial approval because it confirms our belief in the importance of popularizing archæology and ancient history, a belief to which we are striving to give voice in RECORDS OF THE PAST. He says: "I firmly believe that the one great hope for classical learning and education lies in the interest which the unlearned public may be brought to feel in ancient life and thought."

The life of all classes of people, the wealthy, the politicians, the common people and the slaves, is briefly and interestingly considered, the object being to "give such a picture of society in general as may tempt a student to further and more exact inquiry." (p. viii.)

The change in Roman life which came with increased wealth, the importation of slaves and the consequent leisure it brought to the upper class of people especially and to the lower classes to some extent, is well set forth in his chapters on the *Lower Population* and the *Daily Life of the Well-to-do*. Attention is called to the letter of Seneca describing a bath in the villa of the elder Scipio at Liternum, as showing one of the lines of improvement. Concerning this bath Seneca says it "consisted of a single room without a window, and was supplied with water which was often thick after rain." This is contrasted with the baths in the villas of Cicero's time when they consisted of at "least three rooms" and sometimes an open swimming-bath.

Although there were gormands in Cicero's time Mr. Fowler warns us against supposing that this kind of self-indulgence was

¹*Social Life at Rome in the Age of Cicero*, by W. Warde Fowler, M.A., Fellow and Lecturer of Lincoln College, Oxford, pp. xiii, 362, Map and 4 illustrations. The Macmillan Co. \$2.25 Net.

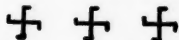
characteristic of the average Roman of this age. Our ideas on this subject have been gained from Horace and Juvenal, and in drawing conclusions from these writers, the author notes, we should make such allowances as we do in noting the foibles of our own day as illustrated "in the pages of *Punch*." (p. 282.)

In the *Epilogue*, after enumerating the signs of degeneracy which appear in the various chapters of the book, Mr. Fowler adds:

"But it would be a mistake to jump to the conclusion that this degeneracy had as yet [in the time of Cicero] gone too far to be arrested. It was assuredly not that degeneracy of senility which Mr. Balfour is inclined to postulate as an explanation of decadence. So far as I can judge, the Romans were at that stage when, in spite of unhealthy conditions of life and obstinate persistence in dangerous habits, it was not too late to reform and recover. To me the main interest of the history of the early empire lies in seeking the answer to the question how far that recovery was made." (p. 355.)

The possibilities for a book on this interesting subject are amply fulfilled, the result being a volume which will attract all who are interested in Roman history or in the present-day sociological problems, most of which were in existence in the Roman Empire during the time of Cicero.

FREDERICK BENNETT WRIGHT.



ARIZONA BIBLIOGRAPHY²

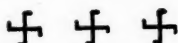
Since no person has spent more time collecting literature on Arizona than has Dr. J. A. Munk and no library private or public contains such a wealth of material as does his, a bibliography of his private collection of "Arizoniana" is of great value and general interest.

Dr. Munk says that his collecting became a fad which he could not stop until "now after 24 years of continuous collecting, I find myself in possession of a unique library that is the only one of its kind in existence. During all these years there has scarcely been a day but what some thought or effort has been given to the subject. The items do not stop at books and pamphlets but also embrace maps, magazine and some general newspaper articles. When my *Arizona Bibliography* was first published in 1900 it contained nearly 1,000 titles which has since grown to almost treble that number. Unusual interest centers in that region of country which accounts, perhaps, for the many books that have been written about Arizona. Its recorded history dates back nearly 400 years to the time of the Spanish Conquest and it has attracted more or less attention ever since. Its desert character and exceptionally fine climate, together with its ancient ruins and many marvels in nature make it the wonderland of America and the Nation's natural sanatorium and playground."

²*Arizona Bibliography, a Private Collection of Arizoniana.* By Dr. J. A. Munk, p. 98. Los Angeles, 1908. Second Edition.

PRE-COLUMBIAN AMERICA¹

This work is a study of the monuments and civilizations of America in Precolumbian times, with a view to discovering their origin. The author in his introduction treats briefly the topics, were the aborigines of America auchthones? the date of the peopling of America, the unity or plurality of the indigenous American races, and the Mound-builders. The first part of the book, entitled *Les Monuments*, deals with the architecture, culture and tribes. Part second, *Les Civilisateurs*, discusses what became of the civilized race? the ancient American ruins, repeated immigrations, the influence of the Chamites on Semitic and Aryan civilizations, and the question of language.



EDITORIAL NOTES

EXPEDITION OF PRINCETON UNIVERSITY.—An expedition sent out by Princeton University under the direction of Prof. Howard C. Butler left in February to do archæological work in the Arabian Desert. A former expedition was sent to Arabia by the University in 1905.

NEW ANTHROPOLOGICAL JOURNAL.—The German Society for Anthropology and Ethnology will publish a new journal *Prähistorische Zeitschrift*, with Dr. Karl Schuchhardt of the Berlin Museum, Dr. Karl Schumacher of the Mainz Museum, and Dr. Hans Seger of the Breslau Museum as editors.

FIFTIETH ANNIVERSARY OF THE SOCIETY OF ANTHROPOLOGY OF PARIS.—On July 7 to 9, 1909, the Society of Anthropology of Paris will celebrate the fiftieth anniversary of its foundation. There will be addresses by the president (Prof. Edouard Aryer), the secretary-general (Dr. L. Manouvrier), foreign delegates and the minister of public instruction.

ARCHÆOLOGICAL BILL IN NEW MEXICO.—On February 25 the "Archæological bill" passed the legislature of New Mexico and was referred to Acting Governor Nathan Jaffa. There was a strong opposition, but the final objections were overcome by two amendments, one referring disputes over the occupancy of the Old Palace to the next legislative assembly, and the other disavowing any intention of binding future legislatures by the passage of the act.

¹*L'Amérique Précolombienne: Essai sur l'Origine de sa Civilisation.* By Alphonse Gagnon. Illustrated. Pp. 376. Laflamme & Proulx, Quebec, 1908.

CARE OF HISTORIC BUILDINGS IN PANAMA.—“An appropriation of \$1,000 has been made by the National Assembly of Panama for the preservation of the historic castles of Chagres and Portobelo, and the Basilica de Nata. They will be maintained in their present form without modifying the style of their construction. A watchman has been appointed to care for the castle of San Lorenzo of Chagres.”

SOCIÉTÉ PRÉHISTORIQUE DE FRANCE.—The fifth congress of the Société Préhistorique de France will be held in Beauvais, beginning July 26. Three days will be given to discussions and the rest of the week to excursions to the dolmens of Trie-Château, Boury, Serifontain and Champignolles; to the Camp of Cæsar at Hermes; the Quaternary stations of Mont-Sainte-Geneviève; to Compiègne, etc. A special exhibition of prehistoric objects will be held at Beauvais during the congress.

MANUSCRIPTS ON MT. SINAI.—Prof. Beneshewitz of the St. Petersburg Academy of Science reports that he has found 926 manuscripts in the St. Catherine monastery on Mt. Sinai which were not mentioned by Gardthausen, and that there are many others. These deal mainly with the lives of the saints, liturgies, church polity, medicine and, most interesting of all, with the history of church music. He also studied a number of the known documents and photographed certain ones.

EPHESIAN TESSERÆ.—Before the meeting of the Royal Numismatic Society on December 17, 1908, Dr. Head read a paper on some Ephesian tesserae having on the obverse a stag and on the reverse a bee surrounded by the words *Κήρυλλος ὠδε πρὸς πάλιν*. Eckhel had considered these pieces as druggists' tickets for advertising the sale of a medicament made of beeswax for the cure of a disease called *πάλιν*. Dr. Head suggests that they might have been charms used by beekeepers for calling back the bees to the hive at swarming time by rattling them in a pot or kettle.

DELAY IN THE EXCAVATION OF HERCULANEUM.—“The Italian government cannot proceed with the excavation [of Herculaneum] until the senate has passed the bill now before it, which declares all archæological discoveries to be the absolute property of the state. A similar law already exists for the *Zona Monumentale* in Rome, and it is now proposed to extend this to the rest of Italy.

“In consequence of the great publicity given to the Herculaneum question, the local landowners, egged on by Neapolitan lawyers, are claiming huge percentages on the supposed literary and archæological treasures buried there. Hence the natural reluctance of the government to proceed till the legal question has been clearly settled. Owing, however, to the vested interests of several senators, there is little chance of the bill passing.”

PRESERVATION OF FRENCH ANTIQUITIES.—The French government has recently taken steps for the better enforcement of the provisions of the law relating to the preservation of antiquities. The Society of Anthropology of Paris called attention to the necessity of some action in view of the discovery made early last year at Braine of a prehistoric sepulchre. A stone cist was unearthed, reported to contain 4 skeletons, a vessel of brown earthenware and a flint hatchet; but all except the hatchet had been destroyed by the workmen before scientific observers visited the spot.

PRESERVATION OF ARCHÆOLOGICAL MONUMENTS OF MEXICO.—“The Department of Public Instruction and Fine Arts, of Mexico, is taking active measures to secure the preservation of the archæological monuments of the Republic. Stringent orders have been given to prevent the excavation, alteration, or transportation of said monuments, except under the authority of the aforesaid department, and their exportation is prohibited. An inspector has been appointed to look out after the interests of the government in this respect and to prevent the violation of the law.”

PHŒNICIAN SETTLEMENT ON MOTYA.—The Phœnician settlement of Motya, an island off Sicily, is being excavated at the present time. The walls are partly unworked rocks in “Cyclopean” style and partly well-wrought masonry. Two gates with massive battlements are good examples of Phœnician fortifications. Two stone staircases in the line of the walls have been found. At the south end of the island, is a rectangular enclosure of stone, evidently used as a harbor, with a narrow channel leading to the sea. At the north end of the island, was a necropolis, which appears to have been in use both in prehistoric and in Phœnician times. The remains of buildings have not yet been thoroughly excavated, but are likely to yield a rich harvest.

WORK AT SPARTA.—At the shrine of Artemis Orthia in Sparta, the British School at Athens has removed a large part of the Roman amphitheater in order to reach the original pavement. Several inscribed stelæ, one of which showed the facade of the archaic temple in relief, were found. South of the archaic temple, were the remains of an older building with crude-brick walls and a *cella* divided lengthwise by a single row of wooden columns. Small objects of interest were terra cottas, lead figurines, carved ivories, and pottery which showed the evolution on Laconian soil of the ware formerly called Cyrenaic. “The effect of the military constitution of Sparta is reflected in the decadence of industrial arts during the VI and V centuries B. C., the finest work dating rather from the VII and VI centuries.”

ANCIENT CITY OF PAGASÆ.—Explorations have been continued on the site of the ancient city of Pagasæ, in northern Greece, under the direction of Dr. Arvanitopoulos. Five towers dating from about 50 B. C. are among the recent discoveries. An adjacent cemetery was used as a quarry. Interesting painted grave stelæ were also found. The remains of a large *stoa* about 170 ft. long dating apparently, from the IV or III century B. C. were uncovered. The walls were lined with a thin layer of fine plaster, which was probably originally covered with pictures. Nearby, were the foundations of a temple about 15 by 10 yds. Probably the neighboring area was the *agora* of the city. The extent and thickness of the walls indicate that Pagasæ was an important town. The gravestones show that the inhabitants were from all parts of the world. A museum building in Volo, which will be completed in May, will shelter the finds from Pagasæ and other prehistoric antiquities of Thessaly recently discovered.

FRENCH EXCAVATIONS IN ALGIERS.—During 1908, the French government continued its work of excavating and conserving the historical monuments of Algiers. The remains investigated are chiefly Roman of the I century A. D. The streets of the ancient city of Thibilis have been laid bare to the extent of more than 75,000 sq. ft. as well as inscriptions dedicated to Faustina, the house of an important personage, and 3 linear measures engraved in stone in the house of the *ædile*. At Guelma the Roman amphitheater was repaired and here 4 classical plays were produced in May, 1908. Roman waterworks with conduits and reservoirs almost complete were found at Chemora and Sétif (Sitifis of the Byzantines). Mussulman remains at Kalaa have also been uncovered. They indicate that Berber art, which is merely a branch of Mussulman art, had an Asiatic and Persian origin rather than a Moorish origin. The Roman camp of Lambœsis is being excavated. Fifty small silver coins dating from the time of Nero to the time of Antoninus Pius were found there. Work continues at Timgad: new streets; an eastern gate with an inscription in which Marcus Aurelius seems to be called "Armeniacus"; houses; the Christian monastery and baptistry; mosaics, and inscriptions have been unearthed. The cells of the Byzantine monks who had small, but complete, hot and cold bath establishments, are interesting.

EXCAVATION OF TWO BARROWS AT TY'N-Y-PROLL.—During August and September, 1908, two barrows were excavated at Ty'n-y-proll, Llanddyfnan, Anglesey, England. "In the larger barrow, about 96 ft. in diameter and 7 ft. in height, were found 7 cinerary urns, another urn of a different type which was empty, a cist with incinerated bones, and an extended skeleton near the edge of the mound. The cinerary urns all contained burnt bones, and in

4 of them bronze was found." The largest urn, about 16 in. high and $17\frac{1}{2}$ in. wide, contained "a bronze celt which was twisted owing to the action of fire, a perfect bronze knife-dagger, an elongated bronze implement nearly $4\frac{3}{8}$ in. long and sharpened at each end, and a piece of stag's horn." The bronze in the other urns had passed through the fire, and in one case had been melted. This barrow evidently belonged to the Bronze Age.

A barrow of earlier date at a distance of 200 ft. from the first, was 66 ft. in diameter and 4 ft. high. There were no urns, but about 2 ft. 3 in. below the ground level, near the center, was discovered a crouched skeleton "in a cist composed of clay and stones, which was covered with a limestone slab about 5 ft. long, 3 ft. 6 in. wide and 8 in. thick." The only other object found here was a small flint knife. The body seems to have been wrapped in skin or leather before interment. Prof. Keith, of the Royal College of Surgeons, considers that the skull belongs "to the type described by Huxley as found in long barrows and river-bed deposits in England and Ireland, and in the cist interments of Scotland, and regarded as Neolithic."

WORK AT CAERWENT DURING 1908.—Work at Caerwent during the last few years has revealed the general plan of the town. It was a rectangle with a highroad from east to west. Each half was divided into 10 *insulae*, or blocks, by a street parallel to the highway and 4 cross streets. The central *insula* of the northern section was the Forum, 100 by 107 ft., which was entered by a gateway 15 ft. 8 in. wide. Probably the Forum was surrounded on the east, south and west by an ambulatory behind which were shops, 19 ft. 6 in. deep and 16 ft. 6 in. wide, usually open along their entire front. The northern part of this area was paved with slabs of red sandstone.

During 1908, under the supervision of Dr. Ashley and Mr. Hudd, 3 large houses, or blocks, abutting on the main street between the west and east gates were excavated. Parts of these seem to have been shops. West of them was found what appeared to be a temple. "It consisted of a *cella* surrounded by a wall, which had probably formed the *podium*, with a court and entrance to the south from the main street." The plan was somewhat similar to that of the temple at Lydney. North of the temple, another house had been excavated with two large yards, one on the west having an imposing entrance or porch. A hoard of coins, most of them *minimi* was found; a large amount of "Samian" pottery; and a small stone figure of a seated goddess with a palm in one hand and a globe or pomegranate in the other. The execution was extremely rude.

FINDS AT ROME DURING 1908.—No regular work of excavation has been carried on in Rome during 1908, but there were some accidental finds. Prof. Gatti will soon publish an account of

the bronze document concerning the Social War which has recently come into the possession of the city. Just where it was found is a matter of conjecture, as it had passed through numerous hands before reaching scientific quarters. Prof. Lanciani believes it was discovered by workmen in the foundations of a new house at the foot of the Tarpeian Rock. "Engraved on that bronze sheet is one of the most interesting pages in the history of the Civil War and the life of the Roman leader Cnæus Pompeius' campaign."

The cutting away of the Montecitorio to make room for the new houses of Parliament yielded few results aside from the solving of the mystery of its origin. The accumulation of rubbish dates from the downfall of the Empire, when the spot seems to have been selected as a dumping place for the broken jars of the Portus Vinarius. "Before the rise in its level took place, the site was occupied by an altar of huge dimensions, sheltered by a growth of poplars or cypresses. The altar stood in the center of a platform enclosed by an iron railing, supported by stone pilasters." Part of the railing has been found *in situ*. No inscription was found. The enclosure may mark the spot where Marcus Aurelius was incinerated. "A fragment of bas-relief found within the railing represents the figure of a barbarian prisoner clothed, capped and bearded like the Marcomanni of the column."

Outside the Porta Portese at the foot of the hills of Monteverde 2 altars have been found *in situ*; one dedicated to LARES VIALES, one to LARES * * * VRIALES and one to LARES SEMITALES. The first and last are clear enough—dedications to the genii of the highroad and the lane, but the other is more difficult of interpretation. Prof. Lanciani believes the "C" is the letter to be supplied, and that the presence of this altar indicates that there must have been a "popular Curia in this neighborhood, which was the scene of the annual gathering of great crowds on the occasion of the feast of the Fors Fortuna. Artisans, slaves, small tradesmen and the non-descripts *qui sine arte aliqua vivunt* journeyed on June 24 to this suburban sanctuary, partly in *corricoli*, partly in boats down the Tiber for the purpose of supping and drinking in one of the innumerable booths erected for the occasion on the banks of the river or on the roadside." A similar feast on the same date is still celebrated.

EVOLUTION OF ANCIENT INDIAN ARCHITECTURE.—

Prof. A. C. Macdonell read a paper before the British Academy on January 27 on the *Evolution of Ancient Indian Architecture*. As there is a lack of historical writings in India from about 1500 B. C. to about 1000 A. D., the study of archæology is of especial importance. But archæological remains have been disappearing rapidly. Fortunately, the Ancient Monuments Preservation Act of 1904 has arrested their

destruction. Pre-Buddhist architecture was of wood, with no temples or carved images of gods. Bricks first appeared in the V century B. C. and the use of stone in the middle of the III century B. C.

Prof. Macdonell divided Buddhist architecture into 3 periods: 250 B. C.-50 A. D.; 50-350 A. D.; 350-650 A. D. Three classes of buildings were considered: stupas (topes), chaityas (assembly halls or churches) and monasteries. The stupa was originally a hemispherical mound of earth intended to enclose relics of Buddha; on top was an ornament (called a tee) ending in one or more umbrellas. Both stupa and tee were elongated as time went on, and finally the 9-storied Chinese pagoda evolved.

The assembly halls were constructed with aisles and an apse. A stupa was placed underneath as an object of veneration. The earliest of these were rock-cut specimens from the III Century B. C. The stupa became elaborate in later times, with a figure of Buddha carved on its front; later yet it became a hollow cell with a figure of Buddha inside. This marked the transition to Hindu architecture.

"The monastery originally consisted of a square hall surrounded by a number of sleeping cubicles. Rock-cut specimens alone survived, there being altogether about 900." In the first period, no figure sculpture appeared. Toward its end, 4 pillars supporting the ceiling were introduced. In the second period, the number of pillars increased from 12 to 28 and a sanctuary containing a figure of Buddha was introduced at the back of the hall.

Hindu religious architecture seems to be derived from earlier Buddhist types, the oldest specimens dating from 600 A. D. There are two styles, the Dravidian or South Indian, and the Indo-Aryan or North Indian. "The Dravidian temple was derived from the Buddhist monastery. Its plan was a square base containing the cell in which the image was kept; the cell was surmounted by a pyramidal tower, always divided into stories and surmounted by a small dome either circular or pyramidal." The later examples stood in a court surrounded by a wall whose special feature was the Gopuran, or great gateway opposite the temple. The best specimen was at Tanjore, built in 1025 A. D. Later there were several courts. These temples had elaborate pillars, which about 1300 A. D. acquired a permanent type with conventionalized animals and riders affixed.

In the north, "the square cell was surmounted by a curvilinear spire with a vertical band running up each face. The top was finished off with a fluted ornament somewhat flattened. In the earliest specimens a porch was added in front of the cell, but was not essential." The earliest ones were found at Bhuvanesvar in Orissa, beginning about 600 A. D. and coming down to 1100 A. D. The number of porches was finally increased to 4. The Indo-Aryan style of temple seems to have had for its prototype the Buddhist stupa.

